# REPORT

ON

# Shipping and Ship-Building

TO

THE MANUFACTURERS' ASSOCIATION,
THE BOARD OF TRADE, AND
THE CHAMBER OF COMMERCE,

OF SAN FRANCISCO,

BY

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*Joint Committee of the three Associations.*

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Adopted by Resolution and ordered Printed December 30th, 1884.

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SAN FRANCISCO:
H. S. CROCKER & CO., PRINTERS AND STATIONERS, 215-219 BUSH STREET.

1885.

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# REPORT

ON

# SHIPPING AND SHIP-BUILDING.

*To the Manufacturers Association, the Board of Trade, and the Chamber of Commerce of San Francisco: —*

Your committee appointed September 22, 1884, to prepare a report on "Shipping and Ship-Building," beg leave to respectfully submit the following:

## The Coasting Trade.

The Coasting trade out of San Francisco being protected from foreign competition by the navigation laws, and by the physical peculiarities of the coast from the competition of large Eastern vessels, except in the trade to Puget Sound and Portland, has thriven, until our coasting fleet, ocean and inland, now numbers 714 enrolled vessels, aggregating 180,167 tons, without counting 189 licensed vessels under 20 tons. As this tonnage includes steam as well as sail, we estimate its average value at $40 per ton, which exhibits a capital invested equal to about $7,200,000. This trade is now suffering from two causes: low freights, induced by overproduction (and consequent low prices) in the lumber trade, which is its principal

employment, and the maintenance of high port charges. It is impossible for vessels to make any money by bringing lumber from Puget Sound at $4 per M, and coal from Seattle at $2 per ton, while wages, wharfage, dockage, stevedore charges and all other port charges are kept up to the rates that were considered fair when those freights were $10 and $5 respectively, and on other voyages in proportion. Moreover, the growing substitution of steam for sail vessels has an increasingly depressing effect on the building or purchase of sailing-vessels as additions to our local fleet. Our building of sailers has for some years been confined mostly to barkentines and schooners suitable for the lumber and coal trade. It is not to be expected that more than this will be attempted in the immediate future, for iron or steel steamers are what commerce now requires in the coasting as well as the foreign trades, except for coal and lumber, and our future building must necessarily be limited by the demand.

## The Foreign Trade.

The *registered* tonnage of the Pacific Coast numbers 280 vessels, aggregating 144,468 tons. This is credited on the Custom House books to the following districts:

| | Vessels. | Tons. |
|---|---|---|
| To California | 192 | 115,114 |
| " Oregon | 9 | 8,637 |
| " Washington Territory | 74 | 20,627 |
| " Alaska | 5 | 90 |
| | 280 | 144,468 |
| Valued at $30 per ton, these represent a capital of | | $4,334,040 |
| Add capital in Coasting Vessels | | 7,200,000 |
| Total capital invested in shipping on the Pacific Coast of United States | | $11,534,040 |

## Proportionate Value of Pacific Coast Shipping.

Comparing our tonnage with that of the whole Union, at the close of 1883, we find that we own :

In the coasting trade, $6\frac{1}{3}$ per cent of the whole.
In the foreign " $11\frac{1}{3}$ " " "
In both, $7\frac{3}{4}$ " " "

The following comparison of the relative interest in shipping of the Pacific States with that of several of the other ship-owning States and of the Union will be interesting to parties concerned :

| | Population. | Tonnage. | One Ton to Population. |
|---|---|---|---|
| * Pacific States in 1880..... | 1,114,568 | 327,565 | 1 ton to 3 $\frac{4}{10}$ persons |
| Maine..... | 648,930 | 533,791 | 1 " $1\frac{1}{8}$ " |
| New York..... | 5,082,871 | 1,175,208 | 1 " $4\frac{1}{3}$ " |
| Massachusetts..... | 1,783,085 | 442,010 | 1 " 4 " |
| Pennsylvania..... | 4,282,891 | 290,647 | 1 " 15 " |
| The United States..... | 50,155,783 | 4,235,487 | 1 " 12 " |

From which it appears that Maine only, of the States quoted, has a larger interest in shipping, in proportion to population, than the Pacific States; that our interest is greater than that of either of the great shipping States of New York or Massachusetts; that it is nearly five times that of Pennsylvania, and nearly four times that of the aggregate population of the United States. *In other words, it is far greater proportionately than our own ship-owners are aware of,* and it is of sufficient magnitude to command the respect of Congress and the country, to say nothing of our own Legislature, could the men who control it be only brought to associate themselves together for the combined assertion of their rights and the united and persistent urging of their claims.

## Decay of American Shipping in Foreign Trades.

The widely known facts of the gradual decay of American shipping in the foreign trades, and of the corresponding growth of foreign, especially English, tonnage, are shown in the ap-

* United States Census for 1880 and Report on Commerce and Navigation for 1883.

pendix to this report. For the details of American and British tonnage, see our tables marked A and B, taken respectively from the U. S. Report above quoted, and from Lloyd's Register of British Shipping; also, the tables marked C and D, compiled by Mr. I. E. Thayer, agent of the Veritas at this port, from the *Repertoire Generale*, showing the relative growth of steam and decadence of sail tonnage of England, America, France, Germany, and the world, from 1879 to 1884. We also produce in our appendix a table marked F, prepared by Mr. J. A. Coolidge, who was for many years the Secretary of the Merchants' Exchange Association of San Francisco, which shows that, notwithstanding the great preponderance of foreign shipping employed of late years in the trade of the United States,* American tonnage entering and clearing at San

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* Note.—Nationality of tonnage entered at seaports of the United States from foreign countries during the years 1856 and 1883 respectively.

| Nationality of Tonnage. | Year ending June 30, 1856. | 1883. | Increase. | Decrease. |
|---|---|---|---|---|
| British | 935,886 | 6,775,526 | 5,839,640 | ..... |
| German | 166,837 | 1,126,113 | 959,276 | ..... |
| Norwegian and Swedish | 20,622 | 694,240 | 673,618 | ..... |
| Italian | 15,677 | 417,728 | 402,051 | ..... |
| French | 23,935 | 376,890 | 352,955 | ..... |
| Spanish | 62,813 | 254,422 | 191,607 | ..... |
| Austrian | 1,477 | 147,848 | 146,371 | ..... |
| Belgian | 200 | 327,539 | 327,339 | ..... |
| Russian | 40 | 71,950 | 71,910 | ..... |
| Dutch | 16,892 | 165,976 | 149,084 | ..... |
| Danish | 5,838 | 98,954 | 93,116 | ..... |
| Portuguese | 4,727 | 19,493 | 14,766 | ..... |
| All other foreign | 14,819 | 49,497 | 34,678 | ..... |
| Total foreign | 1,269,763 | 10,526,176 | 9,256,413 | ..... |
| Total American | 3,194,275 | 2,834,681 | —359,594 | 359,594 |
| Aggregate | 4,464,038 | 13,360,857 | 8,896,819 | ..... |

Proportion of American, British and Foreign Tonnage in U. S. Trade.

| | American % | British % | Foreign % |
|---|---|---|---|
| 1856 | 71.56 | 20.97 | 28.44 |
| 1883 | 21.22 | 50.71 | 78.78 |

[From U. S. Report on Commerce and Navigation, 1883, p. lxv.]

Francisco has, from 1868 to 1883, comprised more than half of the whole. But in this connection two facts must be borne in mind:

*First.* That so far as our grain export is concerned, few American vessels, wherever owned, would be engaged in it were it not for the protection our navigation laws afford to the "coasting" trade between American Atlantic and Pacific ports, which accounts for the excess of 959,096 tons in the departures for foreign ports over the arrivals therefrom at San Francisco, as shown in the table.

*Second.* That hardly any of the American tonnage engaged in our grain trade is owned at San Francisco. It is in the Cape Horn trade to and from San Francisco that Maine deep sea tonnage is principally employed, this being almost the only voyage left in which large American wooden sailers can be used with even a hope of profit, while this hope is being gradually supplanted by the certainty of loss,* owing to England's recent overbuilding the demands of the world's transportation with her splendid iron and steel vessels, principally steamers.

## Why Our Flag is Disappearing from the Foreign Trade.

The striking contrast shown during the past twenty-five years between the growth of British shipping and the decay of the American, is shown by David A. Wells, in his little book entitled "Our Merchant Marine," published in 1882, and in his several articles in the *North American Review*, to be mainly due to the working of free trade in England as opposed to protection and other legal obstructions in the United States. Our argument in defense of the same theory as to the effect of the tariff upon our shipping may be condensed as follows:

Owing, in great measure, to high tariff in the United States,

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* Note.—Many of the largest and finest specimens of American wooden vessels have been laid up in San Francisco for one to three years for want of profitable employment.

domestic manufactures have increased from 1850 to 1880, as shown in the following extract from the census of the latter year:

| | CAPITAL. | HANDS. | WAGES PAID. | VALUE OF PRODUCT. |
|---|---|---|---|---|
| 1850..... | $ 533,245,351 | 957,059 | $236,755,464 | $1,019,106,616 |
| 1880..... | 2,790,272,606 | 2,732,025 | 947,953,795 | 5,369,579,191 |

But of all this enormous manufacturing product, the amount exported was in 1883 only *$194,954,182, or the insignificant fraction of three and one-half per cent of the whole, the remaining ninety-six and one-half per cent being consumed within the country, where alone the high wages and general wealth largely resulting from the tariff, have enabled the people to pay remunerative prices for articles too expensive to be profitably sold abroad in competition with the cheaper conditions of manufacturing elsewhere.

So of agriculture, whose increase in capital invested between 1850 and 1880 was as $3,967,343,580 is to $12,104,001,538; and against whose product of $2,212,540,927 in 1880 we find an export of only †$685,961,091, or thirty-one per cent. of the whole, the balance being consumed within the country, and in a protected market.

But the value of 1,269,681 tons of American shipping in the foreign trade estimated at $30 per ton (it consisting almost wholly of sailing vessels, among which are very few new ones), does not exceed $38,090,430—the net revenue from whose employment, after deducting expenses, may be safely placed at nothing at all; for our small remaining fleet is occupied merely in the attempt to earn expenses, an attempt that would long since have been abandoned were it not for the traditions of the past, and the hope of better times in the future.

The figures given in the census of 1880 are attacked by the Metropolitan Industrial League in their elaborate pamphlet, prepared by Charles S. Hill, in 1882, for the information of the Congressional Tariff Commission, as being far below the truth. This pamphlet gives the following statement

* U. S. Report on Com. and Nav., 1883, p. xlvi.

† Ib.

as the real value of our manufacturing and agricultural product from 1850 to 1882:

| | Manufactures. | | Agriculture. | |
|---|---|---|---|---|
| | Value Product. | Increase Per Cent. | Value Product. | Increase Per Cent. |
| 1850 | $1,019,000,000 | ..... | Not given. | ..... |
| 1860 | 1,886,000,000 | 85 | Not given. | ..... |
| 1870 | 4,232,000,000 | 123 | $2,448,000,000 | ..... |
| 1882 | 8,000,000,000 | 90 | 7,500,000,000 | 200 |

If these figures be accepted as true, then our exports of manufactures fail to reach 1½ per cent of the production, and only 9 per cent of our farm produce reaches a foreign market!

## Comparative Wealth of the United States.

The pamphlet just quoted gives the following statement of the financial condition of our country as compared with the others indicated:

| | Wealth. | National Debt. | Percentage of Debt to Wealth. |
|---|---|---|---|
| United States | $55,000,000,000 | $1,800,000,000 | .0327 |
| Great Britain | 45,000,000,000 | 3,800,000,000 | .0833 |
| France | 40,000,000,000 | 4,000,000,000 | .10 |
| Germany | 25,000,000,000 | 90,000,000 | .0036 |
| Russia | 15,000,000,000 | 2,000,000,000 | .1333 |
| Austria | 14,000,000,000 | 2,000,000,000 | .1430 |

From which it appears:

That we are altogether the richest of these six nations.

That, excepting Germany, we owe least, in proportion to our ability to pay.

It seems, therefore, that by the operation of our exclusive tariff, we have so stimulated our internal resources, as to be almost entirely independent of foreign trade; so that American merchants are no longer found in foreign ports; American shipping is no longer engaged in foreign commerce, and as if for want of these interests to protect abroad, the American

navy no longer exists. By the silent but unremitting action of the tariff, the manufacturers and farmers have unwittingly absorbed the ship-builder with his thirty dependent trades, and the ship-owner with his officers and crews. For the market of the manufacturer and farmer is within the protected country, but the increase in the cost of building and navigating a ship caused by the tariff, carries with it no increase in the income of the property. So the American ship is sent out burdened and crippled by American law, to be helplessly slaughtered by her free trade and cheap labor competitors in the open market of the broad ocean!

### Railroads and Shipping Compared.

To place this antithesis in a still stronger light, witness the following figures:

| | | |
|---|---|---|
| The value of stocks and bonds representing railroads within the United States, in 1883, as given by Poor's "Railroad Manual," is.. | | $7,495,471,311 |
| The R. R. freights earned were..... | | 823,772,924 |
| The numbers of tons transported ..... | | 400,453,439 |
| The numbers of passengers..... | | 289,190,783 |
| The value of merchandise transported estimated at $25 per ton..... | | $10,000,000,000 |
| But the value of the American shipping in the foreign trade as above quoted is only..... | | $38,090,430 |
| *The tonnage of American vessels entered in 1883, from foreign ports was..... | | 2,834,681 |
| Total value carried by vessels of all nations: | | |
| † Imports..... | $723,180,914 | |
| ‡ Exports..... | 804,223,632 | |
| | $1,527,404,546 | |
| §Of which only 21.22 % was carried in American vessels, or the value of..... | | $324,115,244 |

* U. S. Report on Com. and Nav., 1883, p. lxv.
† Ib., p. 277.
‡ Ib., p. xlvi.
§ Ib., p. lxiv.

Of passengers, American vessels carried but few, the Atlantic passenger trade being entirely in the hands of foreigners.

## The Tariff Cannot be Reduced merely to Benefit Shipping.

Bearing now in mind the enormous values of the protected industries within the country, as compared with the insignificance of the shipping interest, which being outside of the country is unprotected; and remembering that the causes which have built up the one are the same which have pulled down the other, it is apparent that to restore the shipping by the abolition or great reduction of the tariff, would be like buying pennies at $20 apiece. It would be "paying too dear for the whistle." *All the present magnificent fleets of Great Britain do not equal the value of one month's production of our factories and farms! With two months of that income we could pay $100 per ton for all the shipping in the world, and have more than six hundred millions of dollars to spare!*† We are not likely, therefore, to change the financial system which has made this nation the richest the sun ever shown upon, even for the sake of owning all the vessels in the world.

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† Note.—At the values given by the Metropolitan Industrial League, our yearly manufacturing product reaches.....$8,000,000,000
And our farm produce..... 7,500,000,000—$15,500,000,000

One-twelfth whereof is $1,291,666,666, which is $39,683,866 more than $100 per ton for England's whole fleet of 12,519,828 tons. At present her shipping is not worth, on an average, more than half of $100 per ton, £9.10s. per ton being the price now asked for building new iron sailing-vessels on the Clyde.

Two months of the above income equals.....$2,583,333,332
The shipping of the world, per "Repertoire," (see tables C and D in appendix) amounts to, steamers, 6,675,230 tons; sailers, 13,010,879 tons; total, 19,686,109 tons, at $100 per ton..... 1,968,610,900

Balance to spare.....$ 614,722,432

But in view of the overproduction which of late years has resulted from the stimulus of the tariff, and now makes the attainment of foreign markets indispensable, as the alternative of shutting down our factories and mills; in view of the possibility of foreign wars, in which we *must* have the advantages of abundant shipping, numerous sailors, well-equipped ship-yards, and trained ship-builders, or find our coasts and cities at the mercy of foreign enemies; in view of the nation's welfare in peace, and safety in war, *some mode of reviving our shipping must be devised which will not disturb the other industries of the country. The treatment of this interest must be as exceptional as its circumstances and conditions.* The alternative is our inevitable abandonment of the high seas, except as the employers of foreign tonnage.

## The Bounty System.

Contending, as we do, that the property and revenues of the American ship-builder and ship-owner in the foreign trade have been indirectly confiscated by the Government for the benefit of all the internal industries of the country, we believe that in deference to the American principle, that "private property shall *not* be taken for public use without just compensation," *Congress is under the clearest moral, if not legal obligation to make this business once more possible by taxation of the interests that have been so enormously enriched at its expense.* Precedents for such enactments are to be found in abundance in the history of our own and other governments.

## The Fishing Bounty.

Thus it may be remembered that in the earlier days of the Republic, when the determination to contest the dominion of the seas with England was a dominant idea with our statesmen, the fisheries were looked upon as a school for American seamen of such importance as to require special encouragement

by direct payments from the treasury. Accordingly, at the very first session of Congress, in 1789, an act was passed offering a bounty of 5 cents per quintal for dry codfish, which was increased from time to time till it reached 30 cents per quintal; a corresponding duty being meanwhile levied upon all foreign fish of the same class. This policy was not abandoned until 1846, and even now special enactments are in force allowing the refunding of duties paid on foreign salt, when used in the fisheries.

## British Bounties.

Old ship-owners need not to be reminded of the sums paid for a short time by our Government to the once famous Collins line of steamers, the withdrawal whereof caused the failure of that enterprise; nor of the sums formerly paid to the Pacific Mail Steamship Company, whose only perquisite of this kind of late years has been paid by colonies of Great Britain. Nor need students of nautical history be informed that the steady and uniform patronage of her merchant steamers by England (in contrast with the fitful and inconsistent course of our Government toward American steamers) has given her at length almost a monopoly of steam navigation. We quote from the *Chamber of Commerce Journal* of New York for November, 1884, the following figures showing the sums paid by Great Britain to British steamers for carrying the mails, and the consequent growth of her steam marine:

| Years. | Tons. | Amt. of Bounty since 1854. | Bounty per ton of Shipping. |
|---|---|---|---|
| 1854 | 304,559 | $5,950,559 | $12 95 |
| 1855 | 379,020 | 5,741,663 | 15 00 |
| 1856 | 385,038 | 5,713,560 | 14 00 |
| 1857 | 416,032 | 5,133,485 | 13 00 |
| 1858 | 441,047 | 4,679,415 | 10 00 |
| 1859 | 434,987 | 4,740,190 | 11 00 |
| 1860 | 452,352 | 4,349,769 | 9 00 |
| 1861 | 504,698 | 4,703,285 | 9 00 |

BRITISH BOUNTIES—CONTINUED.

| YEARS. | Tons. | Amt. of Bounty since 1854. | Bounty per ton of Shipping. |
|---|---|---|---|
| 1862 | 537,134 | $4,105,353 | 8 00 |
| 1863 | 593,773 | 4,188,275 | 7 00 |
| 1864 | 695,575 | 4,503,050 | 7 00 |
| 1865 | 822,732 | 3,981,995 | 5 00 |
| 1866 | 874,425 | 4,227,018 | 4 50 |
| 1867 | 899,362 | 4,079,996 | 4 20 |
| 1768 | 900,599 | 4,047,586 | 4 20 |
| 1869 | 940,721 | 5,481,690 | 6 00 |
| 1870 | 1,111,375 | 6,107,761 | 5 50 |
| 1871 | 1,317,548 | 6,070,741 | 5 00 |
| 1872 | 1,536,075 | 5,693,500 | 4 00 |
| 1873 | 1,711,787 | 5,665,296 | 3 50 |
| 1874 | 1,868,059 | 5,697,366 | 3 00 |
| 1875 | 1,943,197 | 4,860,000 | 2 60 |
| 1876 | 2,902,538 | 4,420,261 | 1 75 |
| 1877 | 2,136,361 | 3,976,580 | 1 75 |
| 1878 | 2,313,332 | 3,914,990 | 1 70 |
| 1879 | 1,508,162 | 3,768,230 | 1 50 |
| 1880 | 2,820,551 | 3,873,130 | 1 40 |
| 1881 | 3,001,377 | 3,601,350 | 1 20 |
| 1882 | 3,290,875 | 3,538,835 | 1 10 |
| 1883 | 5,120,000 | | |
| Amount bounty paid prior to 1854 | | 28,450,000 | |
| | | $164,264,929 | |

## FRENCH BOUNTIES.

The French subsidies granted by a law passed in January, 1881, for ship-building, are estimated upon the gross tonnage, and are as follows: For iron and steel vessels, 60 francs per ton; for wooden vessels of 200 tons or more, 20 francs per ton; for wooden vessels less than 200 tons, 10 francs per ton; for composite vessels, 40 francs per ton; for engines placed on board steamers, and for auxiliary apparatus, boilers, pipes, etc, 12 francs per 100 kilograms.

The French navigation bounty is fixed at 1 franc 50 centimes per registered ton per 1,000 miles run, for new vessels. It is confined to vessels engaged in the foreign trade, and is to

be reduced annually during a period of ten years, when it will cease. The navigation bounty is increased 15 per cent in the case of vessels built according to plans approved by the French Marine Department. Vessels receiving bounties are required to carry the French mails and mail agents free of charge.*

The result of these bounties, as apparent from the *Repertoire Generale* (see tables C and D, Appendix), shows a gain between 1881 and 1884 of 132 French steamers, with a net tonnage of 188,127 tons, and a decrease of 335 French sailing-vessels, with a net tonnage of 82,606 tons. This shows a net gain of 105,521 tons, all steam, or, at the usual estimate of one steam ton to three sailing tons, a net gain of 481,775 effective tons in the French merchant marine, as the apparent result of the bounty system in only three years.

## Congressional Inaction.

Why, in the face of this, and numberless other precedents that might be cited from both our own and foreign legislation (which it is not necessary to quote here), is such an outcry now made against the moderate appropriation from the treasury which is absolutely necessary, not to merely *encourage a small portion* of our maritime industry (fishing), but to *prevent the absolute destruction of all of it* that is seeking to engage in foreign trade? In the face of an annual expenditure of some† $18,500,000 for carrying inland mails, and $300,000 paid foreign vessels for carrying ocean mails, which excites no complaint from the people, why such opposition to the proposition to employ $5,000,000 annually in paying for

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*From David A. Wells' "Our Merchant Marine."

†The figures for 1883, per Postmaster General's Report, were:

| | |
|---|---|
| For carrying inland mail by rail | $13,099,146.74 |
| by Star Route service | 4,712,845.51 |
| by steamboats | 606,703.21 |
| | $18,418,695.46 |
| For foreign mail transportation | 292,833.91 |

Mr. Blaine, however, in his "Twenty Years of Congress," p. 625, gives the cost of transportation of the mails for 1883 at $23,870,666.00.

ocean postal service in American steamers, so built as to be available for Government use in case of war? Why such reluctance to employ a few additional millions from our overflowing treasury, in refunding to iron and steel ship builders such addition to the cost of their work as has been imposed by the tariff? Why is Congress so dilatory, so inattentive, so careless of the crying needs of the merchant marine and navy as to ignore the subject, session after session, and finally yield only the trifling concessions, grudgingly dealt out by the Dingley bill, while all the measures that would touch the vitals of the question are studiously ignored? In whose interest has been such legislative conduct—that of America or England? And if the latter, what has been the motive of it?

## Bounty is not Subsidy.

We look upon the denial or indefinite postponement of all the petitions heretofore presented to Congress by ship-owners, asking for bounties on construction, and compensation for carrying the ocean mails—on the pretense that such payments would be "subsidies"—as a false, pernicious, and grossly ignorant pandering to political prejudice. All that the ship-owners and builders ask is the *equalizing of the tariff conditions* that have ruined their business and destroyed in one operation our registered shipping, and the possiblity of our naval defense in case of war. They ask not for compensation for past losses, which, perhaps, they might justly do—but only for such portion of the revenue levied for the enhancement of all other interests, as would restore to shipping, fair equality with those other interests. They object to being longer ruined by the confiscation of their property for the benefit of the farmer, the miner, the manufacturer and everybody else. Congress *has* "subsidized" the Pacific Railroads by giving them enormous land-grants, as an inducement to construct works of national importance. *This* was the kind of gratuity to which the people now object. There is no similarity whatever between the two propositions. "*Subsidy is a gift in advance to induce*

*future investment.* There is no element of claim or equity in it. It is like an extra freight offered to secure the undertaking of a dangerous voyage. *But what the ship owner and builder ask is in the nature of a claim for losses inflicted by the Government.* Their property has been blockaded *by Government action* in waters so shallow that many of the vessels are already stranded, and the remainder, having no room to tack or wear, are in imminent peril of the like disaster. These people demand that the blockade be raised; that Government shall no longer pursue them, but shall now become their friend; shall tow them into the offing, and there leave them in the same circumstances of freedom as it guarantees to all other American citizens. Let Congress persist in denying this petition, and inevitably the American flag must soon wholly disappear from the world's commerce, or float only over foreign built vessels, with the necessary result of the extinction of that ship-building art which is so indispensable to our national defense.

## Results of Former Agitation.

In October, 1882, the Board of Trade of San Francisco held a public meeting, at which were present, by invitation, Senators Farley and Miller, and the Hons. H. F. Page (then Chairman of the House Committee on Commerce and Navigation) and W. S. Rosecrans, of our Congressional delegation. At that meeting a report on the shipping question was read, asking of Congress the enactment of several specific measures in reformation of shipping laws, in many of which we co-operated with Eastern commercial bodies. At the request of the delegation our recommendations were afterwards expressed in six bills for Congressional action, all of which were adopted by the Joint Committee of both Houses on Shipping, and promptly introduced in the House during the 47th Congress by Mr. Page, and in the Senate by Senator Miller. No action was had at that session, though Mr. Page succeeded in holding the House to the steady consideration of the bills, during several days of fierce debate; the most notable result whereof was the striking

out all appropriations in aid of the building of American vessels, by the decisive vote of 161 to 50, as well as of all other propositions that would have substantially benefited the shipping interest.

## The Dingley Law.

At the last session, however (being the first session of the Forty-eighth Congress) the now well-known "Dingley" bill was passed. The following analysis will show wherein Congress has agreed, and wherein it has thus far disagreed with the views of the commercial bodies East and West, as expressed in our memorial, and the bills referred to:

| *Congress was asked to Enact:* | *The Dingley Law Enacts:* |
|---|---|
| 1. That the Government should pay to all builders of iron and steel vessels for foreign trade, using American material, a sum equal to the duties on the like kind and quantity of dutiable foreign material. | 1. Nothing. |
| 2. That an American vessel losing any American officer below the grade of Master might employ a foreign officer for the return voyage, without penalty. | 2. Granted. |
| 3. That all sections in the U. S. Statutes requiring the payment of 3 months' extra wages to seamen discharged in a foreign port be repealed. | 3. Reduced to one month's extra wages in certain cases, otherwise granted. |
| 4. That the uniform allowance of $10 for returning destitute seamen to an American port be changed to 50 cents per day of the length of the voyage. | 4. Changed to $10 for voyages not exceeding 30 days, and $20 for longer voyages, with additional allowances for carrying disabled seamen. |
| 5. That engagements of seamen might be made on time contracts, as well as on contracts for the voyage only. | 5. Granted. |
| 6. That the requirement to return or account for seamen shipped foreign from an American port be repealed. | 6. Granted. |
| 7. That the payment of advance wages be made illegal. | 7. Granted. |

| *Congress was asked to Enact:* | *The Dingley Law Enacts:* |
|---|---|
| 8. That foreign-bound American vessels be required to carry a slop-chest, and supply seamen with necessaries at not more than 25 per cent profit. | 8. Granted, with the limit of 10 per cent profit. |
| 9. That the tonnage tax of 30 cents per ton per annum might be commuted to American vessels carrying apprentices, natives of the United States, at the rate one to each 300 tons of the vessel's register. | 9. Not granted; but the tonnage tax reduced on vessels of all nations, which is no more beneficial to American than to foreign vessels. The apprentice system ignored. |
| 10. That enrolled and licensed vessels be compelled to carry apprentices. | 10. Not granted. |
| 11. That registered vessels be permitted to import or withdraw, free of duty, all provisions, stores and supplies to be used or consumed by American vessels. | 11. Granted, excepting as to articles used in equipment of vessel. |
| 12. That all registered vessels be declared exempt from state or municipal taxation. | 12. Ignored, as conflicting with State rights. |
| 13. That Consular fees be no longer chargeable against vessels. | 13. Granted. |
| 14. That a sum not exceeding $5,000,000 per annum be appropriated for carrying ocean mails in American iron and steel steamers, under ten years' contracts, to be let by bids: the steamers to be built on plans adaptable for war purposes, and the contracts to contain a clause fixing the price at which the vessels might be appropriated by the Government in case of war, for transports or cruisers. | 14. Not granted; but the laws compelling the carriage of mails by all American vessels, for the ocean postage, repealed, thus preparing the way for the measure asked for. |
| 15. That a Department of Commerce and Navigation be established in the Executive Department, having powers and duties analogous to those of the British Board of Trade. | 15. Entirely ignored, unless the act of July 5th, 1884, appointing a single Commissioner of Navigation, with nothing like the powers exercised by the British Board of Trade, be considered a concession to the petitioners. |
| 16. That seamen might be shipped at foreign ports on time or by the voyage. | 16. Granted. |

In addition to the above specified enactments, several other concessions were made to ship-owners in the "Dingley" law,

of more or less value in the employment of their vessels. But neither that statute nor any other that has been passed during the last twenty-five years bears the impress of such patriotism and statecraft on our side as is required to match the consummate skill whereby the British Government has secured control of the high seas. Our maritime affairs have been allowed to go from bad to worse through sheer neglect, while the English have so carefully stimulated theirs that their vessels built in 1883 (mostly iron and steel steamers) aggregated 1,027,937 tons, and brought up the total of their net tonnage to 12,519,828,* while our registered fleet has dwindled to 1,269,681 tons, nearly all wooden sailers more or less the worse for age.

Among the speakers at the jubilee dinner of Lloyd's Register of Shipping, on October 30th, 1884, was Mr. John Glover, from the report of whose remarks we quote the following:

† "He drew a contrast between the years 1834, when the society of Lloyd's Register was established, and 1884, from which it appeared that the entries and clearances were 6,500,000 tons in the former year and 56,000,000 tons last year; that the value of our exports and imports had risen from £91,000,000 in 1834 to £665,000,000 last year; that the effective carrying power under our flag had grown from 2,500,000 tons to 16,000,000 tons; that there were built in 1834 of sailing tonnage only 102,000 tons, and that in 1883 even of sailing tonnage 153,000 tons were built, and, in addition, 905,000 tons of steam tonnage, which, reduced by the usual rule that a steamer is equal to three sailing-vessels, made the increase in carrying power in 1883 twenty-eight times greater than that of 1834. In other words, the value of our imports and exports between 1834 and last year had increased sevenfold, our entries and clearances of tonnage had increased ninefold, our registered tonnage sixfold, and the effective carrying power built was twenty-eight times greater last year than it was in 1834."

Another of the speakers—Sir George J. Goschen, M. P.—said:

"In considering the matter there was one point which had not

* See table B, Appendix.

† From the *Shipping Gazette Weekly Summary* of November 7th.

been sufficiently emphasized, namely, the tremendous advantage which this country possessed in the resources of her ship-builders, who had accomplished such splendid results in passenger vessels, and would be prepared in an emergency to produce, with a rapidity which would astonish them, vessels of war."

Such is the result of England's care *versus* America's neglect of maritime affairs!

## Free Ships.

We believe that it is the true policy of our Government to maintain the old navigation laws, and to endeavor to equalize the adverse operation of the tariff upon shipping by direct contributions from the treasury, both for building the iron and steel vessel of the present and future, and for carrying the ocean mails. But if the very decisive vote of the Forty-seventh Congress against these propositions is to be taken as final—if the sentiment of the West and South be so thoroughly indifferent to an industry in which the people of those sections have no personal interest, that it shall prove impossible to arouse it even to the value of the art of ship-building in case of war—then it seems to us that American citizens should be permitted, for a while at least, to purchase and register foreign-built ships for the foreign trade, rather than to abandon the seas entirely. The effect of such a law would be to furnish us at once with as large a fleet as we could use, of England's best iron and steel vessels, at a cost far less than that of building them in our own country. For England has recently so greatly overbuilt the world's demands, that thousands of her vessels are reported to be laid up for want of business.

The results of this policy would probably be the investment of considerable sums in British-built tonnage of the largest class, both sail and steam, and the earning for American owners of whatever profits might be realized from its use. It would again afford employment to American masters and officers, and increased custom to American underwriters, ship-

chandlers, rope and canvas factories, and other industries that supply or depend upon shipping.

But, *per contra*, though it would not destroy any existing ship-yard (for there are none, except for the coasting trade), it would probably seal the doom of that industry for the foreign trade. And by furnishing a new and extensive market for the sale of British bottoms, it would greatly stimulate the ship-yards of Great Britain, which would easily be able to build two new vessels for every old one sold to us. The English would have the plant, the skilled labor, the capital, controlled by experienced hands, always ready to maintain their present advantage over us. Our relations with Great Britain would be continually affected by her permanent maritime superiority. Should a war break out between the nations, she would be in a position to cut off our supply of shipping entirely, while doubling her own. She could lay all our wealthy sea-board cities under immediate contribution; could transport large armies where she pleased; could blockade our whole coast on both oceans. What could *we* do under such circumstances to rid ourselves of the enemy?

Again, if peace continues, and if we were allowed to purchase British bottoms for the foreign trade, how long ere owners in our coasting trade would claim the same privilege? How long ere they would cry out against the injustice of being compelled to pay $100,000 for an American-built steamer, when the merchant in the foreign trade could buy as good a one for $75,000, or less? And if this demand were complied with, what would remain to prevent the entire extinction of the ship-building art in the United States?

While, therefore, we recognize the extreme difficulty of dealing with this question after so long a period of neglect on the part of our Congress, especially in view of the recent flooding of the shipping market by England (who seems to have sought to remove all motive to disturb her empire of the seas by destroying the profits of the carrying trade for every nation), we cannot but feel that a great deal may be accomplished if our National Legislature will adopt the following:

## Recommendations to Congress.

*First.* Let Congress provide for the payment of a direct bounty from the treasury to all builders of iron and steel vessels, steam or sail, to be engaged in the foreign trade, or between Atlantic and Pacific ports of the United States, and using American material; said bounty to be equal to the import duty which would have been collected upon the importation of foreign material of like description and quantity. (See bill in Appendix.)

*Second.* Let Congress make provision for carrying the ocean mails in American-built iron and steel steamers of large size and great speed, and so constructed as to be easily converted into war cruisers in time of war; said mail service to be let to the lowest responsible bidders, in like manner as inland mail contracts are let, and the price at which the Government may condemn the steamers for public use in case of war to be specified in the contracts. (See bill in Appendix.)

*Third.* Above all, let Congress establish in the Executive Department a permanent Bureau of Commerce and Navigation, having control of the pilot service in all ports of the United States; also of all steamer and boiler inspectors and shipping commissioners; the examination and discipline of officers of merchant vessels; and other powers similar to those of the British Board of Trade; said Bureau to consist of at least five members, to be respectively an admiralty lawyer, a merchant, a ship-builder, a ship-master, and a steam-engineer; and the other details of the law to be approximately such as were specified in the bill proposed by the Board of Trade of San Francisco, and introduced in the Senate of the United States by Senator Miller of California, at the second session of the Forty-seventh Congress, a copy whereof is appended to this report. (See Appendix.)

*Fourth.* Let Congress further enact an apprentice system for all vessels of the United States employed upon the high seas.

*Fifth.* Let Congress take immediate steps for the building of at least twenty-five steel war steamers, of great speed, and

carrying a few long-range rifled guns, for the protection of our foreign shipping in time of peace; and also provide, steadily and efficiently, for the maintenance of our navy on a respectable footing, as compared with England and France.

*Sixth.* But if Congress again refuses to entertain the idea of paying bounties for the construction of American vessels, then we see no way to restore our interest in shipping in foreign trade except by permitting the purchase of foreign-built vessels. We are willing (in this case only) that such permission should be granted, as an experiment, for a short time, say for five years, and limited strictly to vessels built of iron and steel, of not less than 1,000 tons net measurement, and not more than five years old; all vessels so purchased by American citizens to be entitled to American registry free of duty, and to give bonds to be employed in the foreign trade only.

### Possible Results of the Free-Ship Policy.

It is possible that the results of such an experiment, for five years, would clearly point out our proper future policy on this question. Our inaction in the recent past has been partly owing to the fact that ship-owners and ship-builders could not agree on the free ship proposition; hence one reason why Congress has been undecided how to act. We have tried experiments in reciprocity treaties, in derogation of our time-honored high tariff policy, and with results more or less satisfactory. Why not make a tentative experiment in the "free ship" matter also?

It is possible that American inventive talent may only be stimulated instead of crushed by admitting free of duty the British iron and steel vessel. When England, in 1849, admitted to registry foreign-built ships of every class, and for every trade, wood was everywhere the only material for ship-building, and of ocean steamers there were none to speak of, But English oak became scarce, imported timber too costly. America was building wooden sailers of better quality and at less cost, and was rapidly gaining on British tonnage. Parties arose over the very question that now agitates us. Pending

the controversy, a writer in the *Edinburgh Review* for 1847 (p. 296), used this language:

"We may depend upon it, that were full permission given us to purchase and employ foreign-built ships, where ships of home construction can now alone be used, our shipwrights, anchor-smiths, sail-makers, and the whole army of mechanics, *whose ruin in that event is so confidently predicted, would only receive a new impulse.* The more direct foreign competition would render them more skillful and more industrious, by which means they would acquire with a better security than they now enjoy for its continuance, a virtual monopoly of the manufacture of British shipping."

What a prophecy was this! During a few years after the repeal of the old obstructions, British tonnage was rapidly increased by the purchase of American bottoms; foreign purchases from us between 1850 and 1864 (principally English) reaching over 1,000,000 tons. But meanwhile, the struggle over the old-fashioned wooden sailer being abandoned as hopeless, the British mechanics turned their attention to new inventions. Utilizing the neglected American idea of propelling ocean vessels by steam and the screw, they devised the compound marine engine. Turning their skill to iron, and finally to steel, their ship-building industry has reached such dimensions, that besides building for all other nations, except our own, they retain under the British flag 5,090 steamers of 4,277,748 net tons, out of the 8,433 steamers of 6,675,230 net tons that comprise the steam fleet of the world; while *we* own but 350 steamers of 347,682 tons (nearly all in our protected coasting trade only.) *

Now, suppose we try the experiment of supplying our present wants by the purchase of a portion of England's excessive tonnage in iron and steel steamers. Our mechanics, borne down by free competition in the construction of that class of vessel, would naturally rack their brains to discover some other that would supplant the English in the markets of the world. Who knows what the "Keely motor" may yet accomplish in navigation? Who knows what electricity may

* See Table D, Appendix.

do? Who knows the future outcome of the recent establishment for metal ship-building by the Union Iron Works at South San Francisco? We are credibly informed that, among the numerous deposits of copper ore in Arizona, there is one mine from which ingots of 96 and 98 per cent of pure copper can be placed on the cars (were a branch railroad built to it) at $3\frac{67}{100}$ cents per pound, and at the rate of 500 tons per month. If England has cheap iron, we certainly will soon have cheap copper—cheap enough to stimulate some of the California inventors (who have already taken out 10,000 patents for their discoveries) to find new uses for that metal in ship-building. Who knows that the Union Iron Works will not some day turn out vessels with bottoms entirely of copper, or made of plates rolled half steel and half copper, thus combining the strength and tenacity of steel with a facing of the only metal which prevents fouling in salt water? And as to the motive power—has the laboratory of nature been exhausted? Will it be always necessary to devote half the tonnage capacity to the carriage of fuel? May not some new Ericsson or Von Schmidt yet find out how to speed the good ship at higher rates than ever, and with such economy of room and expense as to again revolutionize the transportation of the world—this time with our flag to the fore?

## South American Commission.

And now comes the United States Commission to the Central and South American States, asking the merchants of San Francisco: "What can the Government do by Congressional legislation, or by commercial treaties, toward securing a market for our surplus agricultural and mechanical products in Central and South America?" And thus we are reminded that, owing—in great degree—to the forcing effects of our tariff, we have overproduced, and must either arrest the processes of supply, thus causing hard times at home, or once more turn our eyes beyond the seas, with a view to an entire change from our recent policy in reference to foreign commerce. To this Commission we reply:

*First.* Urge upon Congress the adoption of all the measures

herein recommended for the restoration of our merchant marine, and for the re-establishment of our naval power.

*Second.* Let the Commission thoroughly investigate in each Central and South American State and country, which of their products we can admit duty free, or at a reduction of present duty, *without crippling any home industry;* and what concession can be obtained in like manner from them for our products, and let reciprocal commercial treaties be negotiated on the basis of the facts as they shall be able to ascertain them.

## Interest of San Francisco in the Development of the Foreign Trade.

In this movement, following the recent requirement and publication of Consular reports from all countries (many of which are very interesting and valuable), we see the dawn of a brighter day for foreign commerce. To the people of our own city this promise is refulgent with peculiar hope. For we have recently lost the greater portion of our Northern trade through the completion of the Northern Pacific Railroad, the recovery whereof depends upon new rail connection, and not upon shipping. We have suffered in Arizona and Southern California by the operations of the Southern Pacific, Texas Pacific, and Atchison, Topeka, and Santa Fe Railroads. To recoup our prosperity, manufactures are now being resorted to, but our markets are so hampered by the smallness of the population to be supplied (whose trade, small as it is, we must share with Eastern competitors) and by the high cost of labor and fuel, that our success must largely depend upon the development of trade beyond seas. Our location in this respect —as to Europe—is disadvantageous. We are the back door of the Union for Atlantic trade. But San Francisco is the front door for commerce on the Pacific. Our future depends largely on the foreign market we may open in South and Central America, in Australia, India, China, Siberia, and the Islands of the Pacific. We should send out our young men-the sons of successful merchants and manufacturers, to found

commercial houses in the sea-ports of all those countries. We should have lines of steamers running to all those places. This is what England does, and it is thus that the British merchant has become omnipresent. It is for him that the British Navy is everywhere affording never-failing protection to British subjects in foreign lands. It is to him that the British steamer, well paid for carrying the mails, comes, weekly or monthly, freighted with British goods, and bearing back the full cargoes of local produce which he gathers for her. How can we Americans hope to build up a foreign commerce worthy of the name, unless we adopt *all* the means which England so successfully uses, and by which she has almost excluded us from any share in the trade of the world? Can San Francisco fail to use her every effort in impressing upon the Government the imperative necessity of such measures, as shall fill her harbor with *her own* shipping, and make for this city the great mart for the exchange of the products of the Eastern Hemisphere?

# SHIP-BUILDING.

Between 1849 and 1860 the shipping employed on the Pacific Coast was almost wholly of Eastern build. With the exception of a few vessels built experimentally or for special use—such as light stern-wheel steamboats for river use—no attempt was made to build shipping from the Puget Sound fir, which has now come into such general use. The experience of the durability of this timber—at first entirely lacking—was gradually gained by its use in repairs; and confidence once established on this important point, the enterprise of our ship-wrights was not long in bringing into general use a ship timber possessing many other advantages over the best timbers used elsewhere.

These advantages are its great length and size, its lightness, and the extraordinary tenacity with which it holds iron fastenings, the latter quality being unattended by the least danger of "iron sickness," so prevalent with oak. Neither is it (when cut at the proper season and salted) subject to "dry rot," as sometimes happens with oak. Nothing need be said here in favor of the splendid spars produced in profusion at Puget Sound, which are in demand at all centers of shipbuilding over all others wherever grown. When to these good qualities are added the virtues of abundance, accessibility, and consequent cheapness, it soon became apparent that the Pacific Coast could build as good a wooden vessel as any Eastern port, and for no greater cost per ton, the low price of the timber being an offset to the higher prices on this coast of labor and ship-chandlery.

The building of shipping of this timber was somewhat stimulated by the publication in 1875 by the Board of Marine Underwriters of San Francisco of "Rules and Specifications for the Construction of Vessels from Pacific Coast Timber," which were carefully prepared by the Marine Surveyors of this port, and distributed gratis among the builders. Vessels

built according to these rules have generally received a first-class rating, and have been insured at the lowest rates, thus neutralizing the previous prejudice against Pacific Coast vessels, as being built of soft wood. We have now a large fleet, modeled for the lumber trade—which is their principal business—and for beauty of model, strength, buoyancy, fast sailing, and enormous carrying capacity, they may safely challenge comparison with any other lumber fleet in the world.

We have caused to be prepared a list of vessels, over fifty tons register, built upon this coast, with the rig, tonnage, year and place of building, and builder's name of each, so far as they could be ascertained by the compiler, Mr. J. A. Coolidge. The following is a resumé of this list. Of course, a large fleet of vessels of less than fifty tons have also been built, mostly for inland service, but these are omitted from our record.

## Vessels over Fifty Tons built on the Pacific Coast.

| Year. | Sail. | | Steam. | | Total. | |
|---|---|---|---|---|---|---|
| | No. | Tons. | No. | Tons. | No. | Tons. |
| 1860..... | 13 | 1,684 | 6 | 2,712 | 19 | 4,396 |
| 1861..... | 18 | 2,560 | 4 | 797 | 22 | 3,357 |
| 1862..... | 5 | 849 | 6 | 1,867 | 11 | 2,716 |
| 1863..... | 14 | 1,521 | 5 | 1,098 | 19 | 2,619 |
| 1864..... | 14 | 1,308 | 6 | 1,984 | 20 | 3,292 |
| 1865..... | 10 | 1,396 | 9 | 1,331 | 19 | 2,727 |
| 1866..... | 17 | 1,794 | 9 | 4,122 | 26 | 5,916 |
| 1867..... | 18 | 2,619 | 7 | 2,484 | 25 | 5,103 |
| 1868..... | 25 | 3,670 | 15 | 4,084 | 40 | 7,754 |
| 1869..... | 37 | 5,114 | 17 | 3,324 | 54 | 8,438 |
| 1870..... | 13 | 1,727 | 8 | 2,305 | 21 | 4,032 |
| 1871..... | 7 | 1,731 | 4 | 1,473 | 11 | 3,204 |
| 1872..... | 8 | 1,312 | 5 | 1,137 | 13 | 2,449 |
| 1873..... | 14 | 2,412 | 6 | 1,818 | 20 | 4,230 |
| 1874..... | 23 | 5,028 | 6 | 793 | 29 | 5,821 |
| 1875..... | 47 | 7,853 | 14 | 6,109 | 61 | 13,962 |
| 1876..... | 34 | 6,440 | 9 | 2,128 | 43 | 8,568 |
| 1877..... | 13 | 2,588 | 8 | 2,937 | 21 | 5,525 |
| 1878..... | 21 | 2,591 | 10 | 3,086 | 31 | 5,677 |
| 1879..... | 7 | 921 | 10 | 7,540 | 17 | 8,461 |
| 1880..... | 13 | 3,574 | 13 | 5,080 | 26 | 8,654 |
| 1881..... | 30 | 7,754 | 7 | 1,986 | 37 | 9,740 |
| 1882..... | 38 | 10,519 | 8 | 3,382 | 46 | 14,091 |
| 1883..... | 33 | 7,277 | 16 | 5,259 | 49 | 12,536 |
| 1884..... | 8 | 937 | 15 | 4,200 | 23 | 5,137 |
| | 480 | 85,179 | 223 | 73,036 | 703 | 158,405 |
| Unknown ... | 7 | 532 | 79 | 19,993 | 86 | 20,525 |
| | 487 | 85,711 | 302 | 93,029 | 789 | 178,930 |
| Barges ..... | ..... | ..... | ..... | ..... | 43 | 7,610 |
| Totals..... | ..... | ..... | ..... | ..... | 832 | 186,540 |

# IRON SHIP-BUILDING.

But after all that we have done in the building of wooden sail-vessels, the time has now arrived when the iron steamer must replace the wooden sailer, even on the Pacific Coast. To most men, the period when this change would occur in California has seemed far in the uncertain future, and it has been with surprise, not unmingled with astonishment, that our ship-owners have witnessed the enormous expenditures of the Union Iron Works during the last two years, in providing at South San Francisco all the heavy plant required for the building of iron and steel vessels, sail and steam, and of any size or description, even up to the largest iron-clad ships of war. It is no disparagement to the numerous other iron works in this city, who have done their share in building the boilers and engines of the 300 or more steamers heretofore launched on this coast, for us to close our report with a full description of the Union Iron Works, for we look upon this enterprise as the germ from which must develop the ship-owning greatness of our port, as the home port of future fleets of iron and steel steamers in the foreign trade of the Pacific and of the world.

## Union Iron Works.

At the request of Irving M. Scott, Esq., your Committee visited the Union Iron Works, and have much satisfaction and pleasure in quoting the following description thereof:

This establishment is something of which San Francisco and the State of California may well feel proud. The works are said to be the most complete of any of their kind in the United States, and not excelled in their appliances by the old and extensive iron ship-yards in Great Britain. It is connected by tracks with the Central and Southern Pacific Railroads, and thus with the entire railroad system of this State and the United States, Canada and Mexico. The position of the works on Mission Bay opens to them communication with the rivers of California and the sea. They are situated at Potrero Point, on Napa Street, occupying nine blocks, or an area of twenty-two acres. They occupy a strip of land 1,488 feet long, from north to south, with a frontage on Central Basin of 1,040 feet. Inside the area, all the streets except Napa Street have been closed by order of the Board of Supervisors.

### The Machine Shop.

The machine and erecting shops are comprised within a brick building 200 by 215 feet, with a gallery 150 feet long and 50 feet wide, all under one iron roof, and divided by four rows of cast-iron columns into five spaces, four of which are 40 by 200 feet, and one 55 by 200 feet. This latter, and one of the 40 feet spaces, are erecting shops, and are each provided with overhead hydraulic traveling cranes, having a run of 200 feet. One of these has a lift of 35 feet and the other of 25 feet; capacity of each, 60 tons. These cranes are operated by compressed air engines, which operate hydraulic machinery to do the lifting. The remaining three (40 by 200 feet) spaces are devoted to running machinery, with the exception of a space 45 by 70 feet, in which is a two-story brick structure containing the offices and drawing-room, the floors of which are concrete. The entire floor and gallery surface occupies an area of 46,400 square feet. Car tracks traverse this floor.

### Planers.

In this shop there is a planer that will plane a surface twelve feet wide and twenty-six feet long, fitted with six cutting tools, suited for planing and cutting any kind of machinery. Another planer of the same general description will cut ten feet square, a second six feet square, and a third four feet square, with smaller ones which cut or plane according to the dimensions required.

### Lathes.

The Lathe Department is likewise perfect. There are special lathes for ship work. One will turn a shaft 49 feet long, or a crank shaft, such as is used in compound marine engines. It is the most complete tool of its class in the United States, and is said to be in every respect the equal of the one used in the dock-yard belonging to the English Navy at Chatham, Kent, England.

### Boring Mill.

There is a Boring Mill that will turn thirty feet in diameter and ten foot face, or it will plane a surface thirty feet long by ten feet wide. The machine will also perform boring, planing, slotting, drilling and key-seating. It occupies a space fifty feet square and forty-three feet high. It combines all the modern tool improvements known up to 1884, and is said not to be excelled by any similar machine in the world. This shop also contains other additional boring mills of twelve, eight and five feet diameter, with various smaller ones, suiting all classes of work. There is likewise one for boring engine and cylinder frames, which will bore a cylinder ten feet in diameter and twenty feet long, face off each end of the cylinder and drill holes in each end without moving it.

In this shop also there is one of the largest hydraulic presses in the world, for pressing in crank pins and pressing on crank plates.

This shop further contains erecting pits, and all small tools necessary to make it a perfect and complete establishment for the purposes designed.

In this shop engines, large or small, can be put together complete, then picked up by an overhead traveling crane, placed upon a car, and taken to the wharf, where a set of steam shears, with a capacity of 100 tons in a single piece, again picks it up and puts it in a vessel in the position required.

It is almost needless to remark, that such a continuity of arrangements, avoiding the necessity of taking apart engines, and transporting them to the vessel, where they must be replaced, materially lessens the cost of the engine to the ship-owner, and places San Francisco on an equality with any city in the world, in the matter of the construction of engines and facilities for placing the same aboard of ships.

### The Engine Room.

Directly south of and adjoining the machine shop is located the Engine House, built of brick, 40 x 80 feet, which contains a compound engine, with the latest modern appliances, and condensing apparatus. The water is supplied to the boilers by an iron tank on the roof of the building, which is two feet in depth and uncovered for the purpose of cooling the water from the condensers of the main engine, and at the same time it serves as a roof.

### The Air Compressor.

In this structure is also located the Air Compressor, which supplies the motive power for the overhead traveling cranes and hydraulic pumps in the different shops; also pumps for the accumulator for supplying hydraulic power throughout the establishment, under a pressure of 1,200 pounds to the square inch. The weight on the ram of the accumulator is composed of a single cube of concrete, 10 x 10 x 10 feet, and weighing 70 tons.

In this compartment are also the electric dynamos used for lighting the establishment with electricity.

### The Boiler House.

The Boiler House is supplied with the latest improved compound fire and water tube type boiler, internally fired, capable of supplying steam to a 250-horse power engine, with separate space for another of similar capacity, so that if anything happens to one boiler there need be no cessation of work. The chimney is of brick, octagonal, and 120 feet high.

### The Tool Room.

Connected with the south-west end of the machine shop is a brick structure, with all the results of inventive genius as manifested in

modern appliances for the manufacture of all the small tools used in these works. Here the machinery is made or repaired for fitting lathes, planers, drills, etc., with small tools, and is supplied with lathes, drills, steam hammers, grinding machines, tempering apparatus, blowers, etc. It has a floor surface of 1,520 feet, and concrete floors.

### Brass and Copper Shops.

Adjoining the tool room is the Brass Foundry and Copper Shop, fitted with the most complete assortment of tools for the manufacture of copper or brass work, with hardening furnaces, tempering and babbitting furnaces, supplied with hydraulic cranes, etc.

### The Foundry.

Directly south of and adjoining the last named building is the Iron Foundry, a brick building 100 x 200 feet, furnishing a floor surface of 20,000 square feet.

### Molding Pit.

The Molding Pit is 14 feet in diameter, 14 feet deep, and can be utilized for making the largest castings. There is a second pit 9 feet in diameter and 10 feet deep.

### Core Ovens.

There are four Core Ovens, with the most approved apparatus for heating and lifting cores, the largest of which is 18 feet square, capable of drying a core weighing twenty tons, in a short time; also smaller ones in which cores of only a few ounces' weight can be dried.

### Traveling Crane.

The foundry is supplied with an overhead Traveling Crane, capable of lifting 60 tons, which travels the entire length (200 feet), covering the whole space of the foundry floor, so that a casting may be run from or to any part of it.

### Cupolas, Etc.

This well-equipped foundry is supplied with three Cupolas, the capacity of them being equal to making a casting weighing 60 tons in three hours. They are of the latest and most improved construction, and are surrounded with an iron floor and a hydraulic lift, which carries up iron, coal, and coke.

The Foundry Blower is also supplied with a separate engine, so that the pressure of the blast can be regulated to suit the condition of the furnace.

There are also the best class of grinding machinery, two sand and clay pulverizers, and cinder barrels.

There are in addition twenty-two small hydraulic cranes for handling flasks.

The car track delivers the iron, coal or coke, or takes the material from the cupolas without any additional cost for handling or transportation, and also enters the foundry at two points convenient to the overhead cranes.

### The Pattern Shop.

Opposite, and eighty feet east of the foundry, is the pattern shop. This is a brick building four stories in height, 50 x 150 feet. The three upper ones are devoted to the storage of patterns, the lower one to making patterns, the running machinery being all on the ground floor, driven by a wire rope from the boiler shop.

It is supplied with the latest of modern machinery for planing, sawing, turning, mitering, gear-cutting, molding, etc., all of the most improved type. Each pattern-maker has his own table and his own window. The three upper stories are supplied with elevators for hoisting, and with water in case of fire, etc.

There is here carried out the most perfect system of registering, so that any patterns once made, can be found at a moment's notice.

### The Store Room.

Adjoining the last named structure is the store-room. This is fifty feet square and four stories in height. In it are kept and stored all the supplies needed in and about the works, such as oils, files, chisels, steel, copper, brass, and anti-friction metals, steam-pumps, safety-valves, and ship-fittings of every description. It is supplied with an elevator, a complete and perfect system of fire-alarms, and other necessary arrangements for the safety of the materials therein contained.

The system of delivery is, that the men in the various departments bring orders from their several foremen to the store-keeper. A receipt is signed for everything delivered, with an entry, detailing the purpose for which it is to be used, and the person to whom delivered, thus insuring economy, certainty and cheapness.

Connected with the store-room are iron racks for boiler tubes of all sizes, boiler plates, iron and steel boiler heads, bar-iron, round and square, of all dimensions, under the charge of the store-keeper, with a similar system for delivery as above described.

### The Boiler Shop.

This occupies a space of 200 feet by 150 feet, and is fitted with overhead Hydraulic Traveling Cranes, such as have been previously described.

### Hydraulic Machines.

There are in this shop three Hydraulic Machines, capable of riveting a rivet of two inches in diameter, or with equal facility, one of three-eights of an inch in diameter.

### Hydraulic Shears.

This shop is also supplied with Hydraulic Shears capable of shearing a steel plate one and a half inches thick and fourteen feet long, or by changing the dies, bending the water-leg for a fire-box boiler, or they will flange a boiler head in the same manner that tin plates are stamped out; or they will form any irregular surface to the shape required. This is said to be one of the largest and most complete of modern tools in the world.

### Bending Machines.

The shop is further supplied with Bending Machines, for shaping or bending angle, T, or Channel Iron, or taking a flat plate and shaping it into any conceivable form, such as expansion rings for flues of internally fired boilers.

### Planing Machines.

There are likewise Planing Machines capable of planing twenty-five feet long, and planing armor plate eighteen inches thick, the tool cutting forward or backward. The sheet is held in place by an ingenious hydraulic device, and the machines are operated entirely by hydraulic power.

### Iron or Steel Rollers.

There are further, in this excellently equipped boiler shop, Rollers for rolling iron or steel plates one and a half inches thick, twelve feet wide, and of any length.

### Angle Iron Shears, Etc.

Here are to be found, in addition, Angle Iron Shears, Punches, etc., and small tools in general use, of the latest and most approved pattern, hydraulic machinery being used wherever possible.

### Transportation Facilities.

A railroad connects in this shop with an overhead traveling crane, thus enabling work to be loaded on cars without the expense of drayage or loading.

There are facilities in this boiler shop for fitting the largest and most difficult kind of boiler work in the world. There are now in course of construction in this shop, the boilers of the steamship *State of California*, the plates being of steel one inch thick, and the boilers fourteen feet in diameter, being intended to carry a pressure of one hundred pounds of steam. These boilers, when completed, will weigh seventy-eight tons each, and will be the largest boilers ever made in this country, capable of carrying one hundred pounds of steam.

### Running Machinery.

Although the Running Machinery in this shop will ordinarily be run by the main engine in the machine shop, it is also provided with a separate vertical engine and hydraulic pumps and accumulator for night work.

### Light, Etc.

The buildings are well lighted, the majority of the windows being twelve feet wide and twenty feet high. They are glazed with corrugated wrought glass, the lower panes being one-fourth of an inch thick, and all the others one-eighth of an inch thick. In addition to the windows, the roofs are supplied with skylights and ventilators.

### The Blacksmith Shop.

The Blacksmith Shop adjoins the Boiler Shop. It occupies a space of 200 by 50 feet, and is fitted with three steam hammers and all the modern tools of all designs requisite to make the necessary forgings and other work in an establishment of this description, and is supplied with a system of hydraulic cranes.

### Extensive Use of Hydraulic Power.

The extensive use of hydraulic power in these works is said to be a peculiar feature, even in these modern times. Not only are the cranes in all the shops, the punching, bending, shaping, shearing, and other machinery, operated by hydraulic power, but even the doors and gates of the various shops and buildings are opened and closed by it.

### Sanitary Arrangements.

The Sanitary Arrangements of the entire establishment are most excellent, and, for completeness in sanitary requirements, the closets, etc., will vie with those of a first-class hotel.

### The Ship-Yard and Wharf.

Across Napa Street, and north from the workshops, are located the Ship-yard and the Wharf. The car track on the wharf is of the usual gauge, and the wharf is so constructed as to sustain a weight of one hundred tons in a single carload, and carry the same to the lifting shears. These have a capacity of one hundred tons for a single lift, operated by steam power.

The shears will take up a piece of machinery of this immense weight, place it over the side of the wharf, and put it in position in the hold of the largest ship afloat.

### Dry Dock.

Alongside the wharf, on the east side, will be the Dry Dock, capable of taking a vessel 600 feet in length, equipped with all the latest modern improvements and appliances.

### Ship Slip.

On the west side of the wharf is a Ship Slip, with water of sufficient depth to float the largest vessels, and where they can come under the shears and have their boilers or other machinery put in or taken out, as a whole, without the expense of taking the same to pieces for removal.

### Ship Ways.

To the west of the ship slip are the Ship Ways, with all the conveniences and appliances for plating and handling a vessel in course of construction. These ways are supplied with overhead traveling cranes, which will take any part of a ship's material from the dock and place it in any portion of the ship.

On the ways there has just been built the iron caisson for the Dry Dock at Mare Island Navy Yard. There is also being built a steel steam collier for the Newport Coal Company, of Coos Bay. This vessel will be of about 1,000 tons burden, 207 feet long, 30 feet beam, and 17 feet depth of hold.

### Ship Shop.

At the head of the ship's ways is the Shop for handling rolling, planing, drilling, counter-sinking, punching, shearing, and fitting the plates and ribs of the ship. Everything is adjusted for the economical and speedy handling of ship plates.

### Drawing Board.

Adjoining this is the Drawing Board, 50 feet square, of Port Orford four-inch cedar, for transferring the lines of the ships from the molding loft to the place where the actual work is done.

### Bending Floor.

There is also adjoining the wharf the Bending Floor, with all the modern appliances for bending and shaping the materials used in iron ship building. Connected with this is a heating furnace that will turn out an angle or plate 40 feet in length.

### Blacksmith Shop.

Adjoining is the Blacksmith Shop, with all the appliances necessary for the ship-yard.

### Molding Loft.

The second story of this building is occupied as the Molding Loft and Drawing Room, where the lines of the ships are laid down. The Drawing-Room is located over the main office, with a superior light, and is fitted with the best known appliances and conveniences

for making and storing drawings. Adjoining the drawing-rooms are the baths, wash-rooms, and other offices for the workmen. The story above is devoted exclusively to making and copying blue prints.

### Extent of Water Front, Etc.

The Company own 1,460 feet of water front, and it is intended to erect other ways from time to time, as business may render them necessary, which, when fully equipped, will give this establishment, as we are told, the largest capacity of any ship-yard in the United States.

In conclusion, we may be allowed to express the hope that the skill and genius shown in the adaptation of the latest improvements in machinery may enable this enterprising company to offset the higher prices of fuel and material at San Francisco, as compared with Philadelphia and the Clyde; that the Government will find it profitable to avail of it in the building of its vessels of war; and that in the near future our ship-owners will crowd it with orders for iron and steel steamers, to be used in the foreign trade under the new order of things to grow out of reciprocity treaties and enlightened Federal legislation on the subject of shipping.

# SAN FRANCISCO WHALE FISHERY.

In the early "Fifties" it is stated that the number of whalers employed in the whale fishery out of the United States amounted to fully 600 vessels, and at the same period the fleet engaged in the Pacific alone was over 300, and it is stated that when the vessels would come into port with their catches at Honolulu, that, laying side and side, they reached across the entire harbor. Subsequently Lahaina was the favorite fitting-out place, and the Sandwich Islands continued until quite recently to be the rendezvous for the New Bedford fleet. Although every possible exertion was made, and all possible inducements were held out by San Francisco merchants to persuade whalemen to make this port their center for supply, they could not be induced to change; and it is only within the past few years, when energetic citizens of San Francisco have themselves entered the field by equipping first-class steamers for the business, that the great success of said fleet has compelled the New Bedford owners to order their ships here, so as to compete in the market with us for the sale of their oil and bone. At the present time the entire fleet of whalers out of the United States numbers 134 vessels. Of this fleet 87 belong to the port of New Bedford, and 19 are owned at this port, 11 at Provincetown, 7 at Edgartown, and 5 at New London. Of the Eastern fleet 24 are engaged in the North Pacific, 17 in the South Pacific, 36 in the Atlantic, 2 in Hudson's Bay, and the remaining 24 are in the various ports fitting out. Of the 87 New Bedford vessels two now employed in the North Pacific are steamers; while of the 19 vessels of San Francisco five are steamers, and their continued success proves them remarkably well adapted to the business—the said five steamers alone turning in to their owners during 1884 more oil, bone and ivory than the entire fleet of Eastern vessels, inclusive of their two steamers.

## COMPARATIVE STATEMENT

*Of the Catch of the Eastern and California Whaling Fleets From 1878 to 1884, inclusive.*

| | Fleets. | Barrels of Oil. | Pounds of Bone. | Pounds of Ivory. |
|---|---|---|---|---|
| 1878 | Eastern Fleet (14 vessels) | 7,795 | 52,090 | 21,800 |
| | California Fleet (11 vessels) | 1,735 | 23,900 | 13,200 |
| | Totals | 9,530 | 75,990 | 35,000 |
| 1879 | Eastern Fleet (13 vessels) | 13,430 | 90,000 | 14,560 |
| | California Fleet (9 vessels) | 3,648 | 26,355 | 8,606 |
| | Totals | 17,078 | 116,355 | 23,160 |
| 1880 | Eastern Fleet (13 vessels) | 20,328 | 291,400 | 9,250 |
| | California Fleet (7 vessels) | 4,860 | 71,000 | 11,400 |
| | Totals | 25,188 | 362,400 | 20,650 |
| 1881 | Eastern Fleet (14 vessels) | 14,838 | 206,200 | 800 |
| | California Fleet (7 vessels) | 4,560 | 65,400 | 3,500 |
| | Totals | 19,398 | 271,600 | 4,300 |
| 1882 | Eastern Fleet (23 vessels) | 16,637 | 242,100 | 9,000 |
| | California Fleet (6 vessels) | 5,017 | 81,000 | 7,600 |
| | Totals | 21,654 | 323,100 | 16,600 |
| 1883 | Eastern Fleet (25 vessels) | 7,772 | 88,404 | 16,500 |
| | California Fleet (12 vessels) | 3,768 | 78,800 | 14,320 |
| | Totals | 11,540 | 167,204 | 30,820 |
| 1884 | Eastern Fleet (22 vessels) | 9,054 | 131,783 | 1,839 |
| | California Fleet (22 vessels) | 11,586 | 183,429 | 3,633 |
| | Totals | 20,640 | 315,212 | 5,472 |

COMPARATIVE STATEMENT—CONTINUED.

| FLEETS. | Barrels of Oil. | Pounds of Bone. | Pounds of Ivory. |
|---|---|---|---|
| Of the catch of 1884 the six steam whalers built and equipped in San Francisco brought into port | 6,680 | 94,042 | 730 |
| Brought down on the Beda | 1,432 | 55,587 | |
| Total catch of the six steamers | 8,112 | 149,629 | 730 |

Or considerably more than the catch of the entire Eastern fleet of twenty vessels, including their two steamers.

The vessels built here have proved themselves better in every way than the Eastern vessels. As an illustration, during the three years mentioned, the steamer *Lucretia*, owned in New Bedford, caught in all only 535 barrels of oil, 8,200 pounds of bone, and 350 pounds of ivory, and the steamer *Belvidere* of New Bedford, caught 1,830 barrels of oil, 19,500 pounds of bone, and 400 pounds of ivory; while in the last two years alone the steamer *Orca*, of this port, caught 3,430 barrels of oil and 34,000 pounds of bone, and the *Bowhead*, the pioneer of the steam whaling fleet of this port, caught in the three years of her existence 2,700 barrels of oil and 54,000 pounds of bone exclusive of her catch of oil for 1884, which was lost in the vessel when crushed in the ice.

All of which is respectfully submitted.

C. T. HOPKINS,
GEORGE C. PERKINS,
ANDREW CRAWFORD,
C. L. TAYLOR,
C. B. STONE,

Joint Committee of the Board of Trade, the Manufacturers' Association and Chamber of Commerce of San Francisco.

APPENDIX "A."

"*A.*"—TONNAGE OF VESSELS of the United States Employed in the Foreign Trade, in the Coastwise Trade, in the Whale Fisheries, and in the Cod and Mackerel Fisheries, from 1850 to 1883, inclusive.

*(From Statement prepared by the Register of the Treasury.)*

| Year Ending June 30. | Foreign Trade. | Coastwise Trade. | Whale Fisheries. | Cod Fisheries. | Mackerel Fisheries. | Total Merchant Marine. |
|---|---|---|---|---|---|---|
| 1850... | 1,439,694 | 1,797,825 | 146,017 | 93,806 | 58,112 | 3,535,454 |
| 1851... | 1,544,663 | 1,899,644 | 181,644 | 95,617 | 50,539 | 3,772,439 |
| 1852... | 1,705,650 | 2,055,873 | 193,798 | 110,573 | 72,546 | 4,138,440 |
| 1853... | 1,910,471 | 2,134,258 | 193,203 | 109,228 | 59,850 | 4,407,010 |
| 1854... | 2,151,918 | 2,322,114 | 181,901 | 111,928 | 35,041 | 4,802,902 |
| 1855... | 2,348,358 | 2,543,255 | 186,848 | 111,915 | 21,625 | 5,212,001 |
| 1856... | 2,302,190 | 2,247,663 | 189,461 | 102,452 | 29,887 | 4,871,653 |
| 1857... | 2,268,196 | 2,336,609 | 195,842 | 111,868 | 28,328 | 4,940,843 |
| 1858... | 2,301,148 | 2,401,220 | 198,594 | 119,252 | 29,594 | 5,049,808 |
| 1859... | 2,321,674 | 2,480,929 | 185,728 | 129,637 | 27,070 | 5,145,038 |
| 1860... | 2,379,396 | 2,644,867 | 166,841 | 136,653 | 26,111 | 5,353,868 |
| 1861... | 2,496,894 | 2,704,544 | 145,734 | 137,846 | 54,795 | 5,539,813 |
| 1862... | 2,173,537 | 2,606,716 | 117,714 | 133,601 | 80,596 | 5,112,164 |
| 1863... | 1,926,886 | 2,960,633 | 99,228 | 117,290 | 51,019 | 5,155,056 |
| 1864... | 1,486,749 | 3,245,265 | 95,145 | 103,742 | 55,499 | 4,986,400 |
| 1865... | 1,518,350 | 3,381,522 | 90,516 | 65,185 | 41,209 | 5,096,782 |
| 1866... | 1,387,756 | 2,719,621 | 105,170 | 51,642 | 46,589 | 4,310,778 |
| 1867... | 1,515,648 | 2,660,390 | 52,384 | 44,567 | 31,498 | 4,304,487 |
| 1868... | 1,494,389 | 2,702,140 | 71,343 | 83,887 | ..... | 4,351,759 |
| 1869... | 1,496,220 | 2,515,515 | 70,202 | 62,704 | ..... | 4,144,641 |
| 1870... | 1,448,846 | 2,638,247 | 67,954 | 91,460 | ..... | 4,246,507 |
| 1871... | 1,363,652 | 2,764,600 | 61,490 | 92,865 | ..... | 4,282,607 |
| 1872... | 1,359,040 | 2,929,552 | 51,608 | 97,547 | ..... | 4,437,747 |
| 1873... | 1,378,533 | 3,163,220 | 44,755 | 109,519 | ..... | 4,696,027 |
| 1874... | 1,389,815 | 3,293,439 | 39,108 | 78,290 | ..... | 4,800,652 |
| 1875... | 1,515,598 | 3,219,698 | 38,229 | 80,207 | ..... | 4,853,732 |
| 1876... | 1,553,705 | 2,598,835 | 39,116 | 87,802 | ..... | 4,279,458 |
| 1877... | 1,570,600 | 2,540,322 | 40,593 | 91,085 | ..... | 4,242,600 |
| 1878... | 1,589,348 | 2,497,170 | 39,700 | 86,547 | ..... | 4,212,765 |
| 1879... | 1,451,505 | 2,598,183 | 40,028 | 79,885 | ..... | 4,169,601 |
| 1880... | 1,314,402 | 2,637,686 | 38,408 | 77,538 | ..... | 4,068,034 |
| 1881... | 1,297,035 | 2,646,011 | 38,551 | 76,137 | ..... | 4,057,734 |
| 1882... | 1,259,492 | 2,795,776 | 32,802 | 77,863 | ..... | 4,165,933 |
| 1883... | 1,269,681 | 2,838,354 | 32,414 | 95,038 | ..... | 4,235,487 |

"*B 1.*"—Statement of the Number, Tonnage and Description of New Vessels built in the United Kingdom, and Registered therein during the years from 1879 to 1883, both inclusive, as prepared from information by the Register General of Shipping, England.

| YEAR. | | STEEL. | | IRON. | | WOOD. | | TOTAL. | | TOTAL OF VESSELS. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). |
| 1879 | Steam ..... | 8 | 14,300 | 318 | 436,339 | 5 | 491 | 331 | 451,130 | | |
| | Sail ..... | 1 | 1,700 | 30 | 34,630 | 139 | 33,878 | 170 | 70,208 | 501 | 521,338 |
| 1880 | Steam ..... | 26 | 36,493 | 362 | 447,389 | 20 | 1,779 | 408 | 485,661 | | |
| | Sail ..... | 4 | 1,671 | 39 | 40,015 | 273 | 18,159 | 316 | 59,845 | 724 | 545,506 |
| 1881 | Steam ..... | 34 | 68,366 | 411 | 590,503 | 30 | 1,659 | 475 | 660,528 | | |
| | Sail ..... | 3 | 3,167 | 50 | 68,650 | 259 | 16,448 | 312 | 88,265 | 787 | 748,793 |
| 1882 | Steam ..... | 65 | 115,449 | 446 | 672,740 | 30 | 1,784 | 541 | 789,973 | | |
| | Sail ..... | 8 | 12,478 | 83 | 112,852 | 246 | 13,066 | 337 | 138,396 | 878 | 928,369 |
| 1883 | Steam ..... | 92 | 141,552 | 548 | 742,292 | 30 | 1,651 | 670 | 885,495 | | |
| | Sail ..... | 11 | 14,193 | 72 | 114,698 | 229 | 13,551 | 312 | 142,442 | 982 | 1,027,937 |
| GRAND TOTALS FOR FIVE YEARS. | | 252 | 409,369 | 2,359 | 3,260,108 | 1,261 | 102,466 | 3,872 | 3,771,943 | 3,872 | 3,771,943 |

"*B 2.*"—Statement of the Number, Tonnage and Description of Vessels registered in the United Kingdon which were returned as Lost, Broken Up, etc., during the years from 1879 to 1883.

| YEAR. | | STEEL. | | IRON. | | WOOD. | | TOTAL. | | TOTAL OF VESSELS. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). | No. | Tons, (gross). |
| 1879 | Steam ..... | | | 131 | 127,353 | 20 | 3,147 | 151 | 130,500 | | |
| | Sail ..... | | | 54 | 42,672 | 767 | 146,681 | 821 | 189,353 | 972 | 319,853 |
| 1880 | Steam ..... | | | 115 | 115,778 | 22 | 1,814 | 137 | 117,592 | | |
| | Sail ..... | | | 53 | 48,645 | 817 | 171,251 | 870 | 219,896 | 1,007 | 337,488 |
| 1881 | Steam ..... | 1 | 1,536 | 139 | 138,370 | 18 | 1,704 | 158 | 141,610 | | |
| | Sail ..... | | | 52 | 43,936 | 821 | 168,579 | 873 | 212,515 | 1,031 | 354,125 |
| 1882 | Steam ..... | | | 158 | 160,743 | 24 | 2,516 | 182 | 163,259 | | |
| | Sail ..... | | | 45 | 46,153 | 769 | 164,293 | 814 | 210,446 | 996 | 373,705 |
| 1883 | Steam ..... | 1 | 1,582 | 177 | 193,960 | 19 | 3,905 | 197 | 199,447 | | |
| | Sail ..... | | | 56 | 54,261 | 686 | 140,233 | 742 | 194,494 | 939 | 393,941 |
| GRAND TOTALS, | | 2 | 3,118 | 980 | 971,871 | 3,963 | 804,123 | 4,945 | 1,779,112 | 4,945 | 1,779,112 |
| VESSELS BUILT, | | 252 | 409,369 | 2,359 | 3,260,108 | 1,261 | 102,466 | 3,872 | 3,771,943 | | |
| VESSELS DESTROYED, | | 2 | 3,118 | 980 | 971,871 | 3,963 | 804,123 | 4,945 | 1,779,112 | | |
| INCREASE, | | 250 | 406,251 | 2,379 | 2,288,237 | | | | 1,992,831 | | |
| DECREASE, | | | | | | 2,702 | 701,657 | 1,073 | | | |

"*B 3.*"—Statement showing the Number and Gross Tonnage of Vessels classed in Lloyd's Register of Shipping, 1884–5.

| | Iron and Steel Steamers. | | Iron and Steel Sailing Vessels. | | Wood and Composite Vessels. | | TOTAL. | | Average Tonnage of each Vessel. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NO. | TONNAGE. | NO. | TONNAGE. | NO. | TONNAGE. | NO. | TONNAGE. | Stmrs. | Sail. | Wood. | Total. |
| British Built. | 4,770 | 6,024,745 | 1,565 | 1,745,684 | 5,031 | 1,477,619 | 11,366 | 9,248,048 | 1,263 | 1,115 | 293 | 814 |
| Colonial Built. | 201 | 158,517 | 58 | 42,549 | 466 | 224,056 | 725 | 425,122 | 788 | 734 | 480 | 586 |
| Foreign Built. | 1,362 | 1,888,461 | 156 | 122,060 | 1,548 | 836,137 | 3,066 | 2,846,658 | 1,385 | 782 | 540 | 928 |
| Totals, | 6,333 | 8,071,723 | 1,779 | 1,910,293 | 7,045 | 2,537,812 | 15,157 | 12,519,828 | ..... | ..... | .... | .... |

## "C."—Exhibit of the World's Tonnage—*Sailing Vessels of 50 Tons and Over.

| Nationality. | No. | Net Tonnage. |
|---|---|---|
| **1879.** | | |
| The World | 49,024 | 14,103,605 |
| English | 18,357 | 5,584,128 |
| American | 5,915 | 2,041,645 |
| Norwegian | 4,178 | 1,382,323 |
| Italian | 2,956 | 924,797 |
| German | 3,159 | 927,984 |
| French | 2,914 | 572,506 |
| Russian | 1,852 | 425,090 |
| **1880.** | | |
| The World | 48,584 | 13,872,881 |
| English | 18,352 | 5,486,666 |
| American | 5,958 | 2,048,975 |
| Norwegian | 4,160 | 1,371,721 |
| German | 3,113 | 953,856 |
| Italian | 2,936 | 913,782 |
| French | 2,772 | 541,853 |
| Russian | 1,875 | 426,226 |
| **1881.** | | |
| The World | 49,037 | 13,911,915 |
| English | 18,403 | 5,435,851 |
| American | 6,045 | 2,055,087 |
| Norwegian | 4,178 | 1,396,289 |
| German | 3,011 | 945,696 |
| Italian | 3,018 | 930,576 |
| French | 2,678 | 514,101 |
| Russian | 2,113 | 470,342 |
| **1882.** | | |
| The World | 48,487 | 13,739,970 |
| English | 18,035 | 5,319,872 |
| American | 6,057 | 2,054,685 |
| Norwegian | 4,112 | 1,381,203 |
| German | 2,871 | 933,387 |
| Italian | 3,054 | 924,951 |
| Russian | 2,155 | 477,072 |
| French | 2,536 | 474,370 |
| **1883.** | | |
| The World | 48,074 | 13,647,877 |
| English | 17,875 | 5,271,160 |
| American | 6,214 | 2,099,218 |
| Norwegian | 4,003 | 1,366,941 |
| Italian | 3,084 | 915,049 |
| German | 2,614 | 894,558 |
| Russian | 2,131 | 468,272 |
| French | 2,434 | 452,316 |
| **1884.** | | |
| The World | 44,734 | 13,010,879 |
| English | 15,384 | 4,752,059 |
| American | 6,344 | 2,161,490 |
| Norwegian | 4,056 | 1,415,795 |
| Italian | 3,037 | 890,422 |
| German | 2,471 | 864,661 |
| Russian | 2,139 | 467,740 |
| French | 2,343 | 431,495 |

* Compiled from the "Repertoire Generale" for 1884, by I. E. Thayer, Surveyor of the French Veritas at San Francisco.

## "D."—Exhibit of the World's Tonnage—*Steam Vessels of 100 Tons and Over.

| Nationality. | No. | Gro. Tonnage. | Net Tonnage. | Nationality. | No. | Gro. Tonnage. | Net Tonnage. |
|---|---|---|---|---|---|---|---|
| **1879.** | | | | **1882.** | | | |
| English | 3,542 | 3,933,966 | 2,555,575 | English | 4,317 | 5,352,549 | 3,462,877 |
| American | 519 | 601,289 | 369,598 | American | 594 | 728,012 | 445,479 |
| French | 292 | 356,636 | 233,972 | French | 414 | 561,318 | 371,853 |
| German | 244 | 265,383 | 184,526 | German | 354 | 411,525 | 292,272 |
| The World | 5,897 | 6,179,935 | 4,021,869 | The World | 7,301 | 8,404,932 | 5,479,441 |
| **1880.** | | | | **1883.** | | | |
| English | 3,787 | 4,265,519 | 2,773,082 | English | 4,649 | 5,919,819 | 3,822,708 |
| American | 548 | 634,292 | 389,937 | French | 458 | 667,474 | 444,265 |
| French | 335 | 423,787 | 277,781 | American | 422 | 601,186 | 374,314 |
| German | 277 | 289,429 | 203,322 | German | 420 | 476,839 | 345,103 |
| The World | 6,392 | 6,745,198 | 4,401,751 | The World | 7,764 | 9,232,096 | 6,037,164 |
| **1881.** | | | | **1884.** | | | |
| English | 4,106 | 4,823,043 | 3,133,453 | English | 5,090 | 6,593,610 | 4,277,748 |
| American | 569 | 666,737 | 408,496 | French | 493 | 737,205 | 490,559 |
| French | 361 | 464,179 | 302,432 | German | 488 | 550,528 | 397,573 |
| German | 304 | 332,033 | 234,660 | American | 350 | 539,342 | 347,682 |
| The World | 6,857 | 7,475,851 | 4,880,558 | The World | 8,433 | 10,209,468 | 6,675,230 |

* Compiled from the "Repertoire Generale" for 1884, by I. E. Thayer, Surveyor of the French Veritas, at San Francisco.

## "E."—ARRIVALS—From Foreign Ports at San Francisco, 1868 and 1883.

| | AMERICAN. | | FOREIGN. | | TOTAL. | |
|---|---|---|---|---|---|---|
| | No. | Tons. | No. | Tons. | No. | Tons. |
| 1868..... | 273 | 336,390 | 199 | 109,538 | 472 | 445,928 |
| 1869..... | 238 | 276,780 | 230 | 140,053 | 468 | 416,833 |
| 1870..... | 237 | 250,945 | 193 | 125,119 | 430 | 376,064 |
| 1871..... | 253 | 256,652 | 177 | 118,191 | 430 | 374,843 |
| 1872..... | 290 | 334,442 | 243 | 163,932 | 533 | 498,374 |
| 1873..... | 270 | 290,621 | 314 | 262,663 | 584 | 553,284 |
| 1874..... | 321 | 357,206 | 338 | 332,908 | 659 | 690,114 |
| 1875..... | 282 | 333,473 | 241 | 270,991 | 523 | 604,464 |
| 1876..... | 309 | 371,054 | 322 | 350,412 | 631 | 721,466 |
| 1877..... | 277 | 350,504 | 246 | 256,849 | 523 | 607,353 |
| 1878..... | 364 | 398,852 | 289 | 317,067 | 653 | 715,919 |
| 1879..... | 373 | 424,507 | 217 | 244,168 | 590 | 668,675 |
| 1880..... | 376 | 416,058 | 275 | 311,127 | 651 | 727,185 |
| 1881..... | 375 | 416,597 | 458 | 568,661 | 833 | 985,258 |
| 1882..... | 380 | 421,365 | 501 | 638,718 | 881 | 1,060,083 |
| 1883..... | 394 | 375,026 | 396 | 477,517 | 790 | 852,543 |
| Totals. | 5,012 | 5,610,472 | 4,639 | 4,687,914 | 9,651 | 10,298,386 |

## "E."—DEPARTURES—For Foreign Ports from San Francisco, 1868 and 1883.

| | AMERICAN. | | FOREIGN. | | TOTAL. | |
|---|---|---|---|---|---|---|
| | No. | Tons. | No. | Tons. | No. | Tons. |
| 1868.... | 344 | 425,245 | 193 | 98,463 | 537 | 523,708 |
| 1869.... | 357 | 400,347 | 230 | 138,001 | 587 | 538,348 |
| 1870.... | 322 | 324,803 | 193 | 124,719 | 515 | 449,522 |
| 1871.... | 302 | 306,101 | 167 | 113,000 | 469 | 419,101 |
| 1872.... | 358 | 414,229 | 233 | 145,814 | 591 | 560,043 |
| 1873.... | 332 | 374,979 | 314 | 254,178 | 646 | 629,157 |
| 1874.... | 333 | 393,654 | 296 | 273,115 | 629 | 666,769 |
| 1875.... | 352 | 440,365 | 255 | 286,596 | 607 | 726,961 |
| 1876.... | 374 | 451,145 | 288 | 314,691 | 662 | 765,836 |
| 1877.... | 378 | 473,233 | 208 | 216,631 | 586 | 689,864 |
| 1878.... | 392 | 430,958 | 288 | 304,970 | 680 | 735,928 |
| 1879.... | 428 | 511,097 | 229 | 249,062 | 657 | 760,159 |
| 1880.... | 421 | 471,138 | 244 | 279,321 | 665 | 750,459 |
| 1881.... | 441 | 501,691 | 470 | 570,177 | 911 | 1,071,868 |
| 1882.... | 436 | 508,113 | 486 | 614,835 | 922 | 1,122,948 |
| 1883.... | 403 | 429,541 | 356 | 417,270 | 759 | 846,811 |
| Totals. | 5,973 | 6,856,639 | 4,450 | 4,400,843 | 10,423 | 11,257,482 |
| Foreign Vessels to Domestic Ports. 1868..... | | | 21 | 15,564 | | |
| 1869..... | | | 9 | 6,754 | | |
| 1870..... | | | 9 | 6,035 | | |
| 1871..... | | | 15 | 8,335 | | |
| 1872..... | | | 4 | 1,867 | | |
| 1873..... | | | 18 | 12,880 | | |
| 1874..... | | | 17 | 12,008 | | |
| 1875..... | | | 33 | 32,865 | | |
| 1876..... | | | 21 | 19,840 | | |
| 1877..... | | | 49 | 48,943 | | |
| 1878..... | | | 14 | 11,862 | | |
| 1879..... | | | 3 | 2,279 | | |
| 1880..... | | | 9 | 8,117 | | |
| 1881..... | | | 1 | 758 | | |
| 1882..... | | | 6 | 5,578 | | |
| 1883..... | | | 8 | 4,972 | | |
| Totals..... | | | 4,687 | 4,599,500 | | |

Compiled by J. A. COOLIDGE.

APPENDIX "F."

(Proposed by the Board of Trade of San Francisco to the 47th Congress.)

## AN ACT

*To encourage Ship-building for the Foreign Trade.*

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.*

1. The original owner or owners of any steamer, ship, or vessel hereafter constructed or completed in the United States, and intended for foreign trade, or for the coasting trade between ports on the Atlantic and ports on the Pacific, which ship or vessel shall be constructed, equipped, or rigged, in whole or in part, of material which is the product of the United States, and the like material, when the product of a foreign country, is subject to an import duty, said owner or owners shall be entitled to receive and collect from the United States a sum equal in amount to the import duty which would have been collected by the United States upon the importation of foreign material of like description and of equal quality with the American material used in the construction, equipment, or rigging of such steamer, ship, or vessel.

2. Such sums shall be paid in the same manner and from the same funds as drawbacks on customs duties, and under such regulations as may be adopted from time to time by the Secretary of the Treasury, and shall be adjusted and the amount thereof determined prior to the registry of such ship or vessel.

3. The certificate of registry of every such ship or vessel shall be entitled "Certificate of Registry under an Act to encourage ship-building in the foreign trade," and shall contain a prohibition of such ship or vessel engaging in the coasting trade except between ports on the Atlantic and ports on the Pacific. Every such certificate shall have indorsed upon it the amount paid, or adjusted to be paid to the owner, under this Act. Every renewal of the registry shall be in like form. Should any vessel so registered be about to engage in the

coasting trade, other than that between ports on the Atlantic and ports on the Pacific, the owners must first surrender such certificate of registry, repay to the Collector of Customs to whom the certificate is surrendered the sum indorsed thereon, and take out a new certificate of registry or of enrollment in ordinary form.

Should any ship or vessel, registered as hereinbefore provided, engage in the coasting trade other than that between ports on the Atlantic and ports on the Pacific, without surrender of such certificate, as hereinbefore provided, or without repayment of the amount indorsed thereon, or without taking out a new certificate of registry or enrollment in ordinary form, she shall be subject to a fine of double the amount indorsed on such original certificate of registry; which fine shall be a lien on said ship or vessel, and shall be ascertained and collected at suit of the United States *in rem* in admiralty, against such ship or vessel, in the District Court of the United States for the proper district. Such suit to be governed by the laws, rules, and regulations pertaining to other suits in admiralty.

4. All laws and parts of laws in conflict with this Act are hereby repealed.

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## APPENDIX "G."

(Proposed by the Board of Trade of San Francisco to the 47th Congress.)

### AN ACT

*To promote the building of American Iron and Steel Steamers.*

*Be it enacted by the Senate and House of Representatives in Congress assembled.*

1. The Post-Master General is hereby authorized and empowered to enter into contracts, not to exceed ten years duration, with the owners of American iron and steel steamers, for the carrying of the mails between ports in the United States

and such ports in foreign countries (the Province of Canada excepted) as he shall deem most expedient for the public service.

2. The total amount of obligations under such contracts shall not exceed five million dollars for any one year.

3. Before making any contract for carrying ocean mails, in accordance with this Act, the Post-Master General shall give public notice by advertising once a week for six months, in not exceeding two daily papers having the largest circulation in each of the cities of Boston, New York, Philadelphia, Baltimore, New Orleans, and St. Louis, and if the proposed service is to be on the Pacific Ocean, then the advertisement shall also be published in San Francisco. Such notice shall describe the route, the time when such contract will be let, the duration of the proposed contract, the size of steamers to be used, the number of trips per year, the times of sailing, and the time when the service shall commence, which shall not be more than two years after the contract shall be let. All details of the mode of advertising and letting such contracts shall be conducted in the manner prescribed in Chapter VIII. of Title XLVI. of the Revised Statutes, for the letting of inland mail contracts, so far as the same shall be applicable to the ocean mail service.

4. In every contract let under this Act, it shall be expressly stipulated, covenanted, warranted and agreed on the part of the parties contracting with the United States:

*First.* That the postal service shall be performed wholly by steamers built after the passage of this Act in the United States, of iron or steel manufactured in the United States, and as far as practicable that all other material required in such construction shall be products of the United States.

*Second.* That such steamers shall be wholly owned by citizens or corporations of the United States.

*Third.* That the steamers shall be of the burden required by the Post-Master General in his advertisement for the letting of such contract, but to be in no case less than a gross registered tonnage of two thousand tons.

*Fourth.* That such steamers shall have a speed capacity at sea of not less than fifteen nautical miles per hour under steam, without the assistance of sails.

*Fifth.* That such steamers shall be constructed on models and according to plans and specifications approved by the Secretary of the Navy and the United States Inspector of hulls and boilers at the place of construction, and that they shall be of sufficient strength and stability to carry and sustain the working and operation of at least four effective rifled cannon of a caliber of not less than six inches, and shall be otherwise adapted to conversion to use as transports or cruisers.

*Sixth.* That in case of war such steamers may be seized and used by the United States as transports or cruisers, upon payment by the United States to the owners of the fair actual value of the same at the time of seizure, such value to be ascertained under such rules and regulations as may from time to time be adopted by the Secretary of the Navy, and to be specified in each contract.

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## APPENDIX "H."

**(Proposed by the Board of Trade of San Francisco to the 47th Congress.)**

## AN ACT

*To establish a Department of Commerce and Navigation, and define its Powers and Duties.*

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.*

1. There shall be at the seat of Government a Department of Commerce and Navigation, the general design, duties and powers of which shall be as follows:

*a.* The control and regulation of pilot service in all ports of the United States, the establishment of fees and regulations therefor, and the appointment of pilots therefor, exclusive of all State laws or regulations.

*b.* The control and regulation of the examination, licensing and discipline of all officers of merchant vessels—whether steamers or sailing-vessels.

*c.* The control and regulation of the business of inspection of hulls and boilers of steamers and the appointment of Steam Inspectors.

*d.* The appointment, supervision and control of all Shipping Commissioners.

*e.* The enforcement of all laws relating to seamen.

*f.* The general supervision of the maritime interests of the nation and the enforcement of all laws relating thereto.

2. Such Department of Commerce shall have the exclusive power of appointment or licensing:

1st. All pilots.

2d. All inspectors of hulls and boilers of steam vessels.

3d. All Shipping Commissioners.

All such officers shall be appointed to hold their offices at the pleasure of the Department during good behavior.

They, or any of them, may be removed by the Department at any time for cause, but the Department is to be the sole judge of the expediency or necessity of such removal.

3. It shall be the duty of the Department: To collect and report to Congress, from time to time, all statistics and information attainable pertaining to the interests of the commerce of the United States.

To report to Congress a complete and harmonious code of laws relating to merchant shipping and seamen.

From time to time, as occasion may arise, to present bills amendatory to or supplementary of the laws relating to merchant shipping, and recommend their passage.

At the request of the President and Senate, or either, to examine any commercial treaty already existing, or proposed to be entered into, with any foreign country, and report to the President or Senate, or both, as may be called for, the opinion of the Department as to the operation of such existing or proposed treaty upon the commerce and commercial inter-

ests of the United States, and to suggest such amendments thereto as may be deemed expedient.

4. The Secretary of the Treasury for the time being shall be *ex officio* a member and presiding officer of the Department of Commerce.

It shall consist of five other members, to be appointed by the President with the approval of the Senate, who shall hold their offices during good behavior.

As nearly as possible, said five members shall be appointed from the following classes:

One member to be a skilled admiralty and maritime lawyer.

One member to be a merchant.

One member to be a ship-builder.

One member to be a skilled engineer.

One member to be a skilled navigator.

Each of said five members shall receive a salary of $5,000 a year.

5. The Department of Commerce may make all the rules necessary for the transaction of its business, and for the control, supervision, and discipline of all subordinate officers by it appointed, and may make all rules and regulations necessary to carry into effect any law of the United States relating to merchant shipping or seamen, except such acts as relate to the revenue.

6. Said Department of Commerce may appoint one chief clerk, at a salary of two thousand two hundred dollars a year;

One assistant clerk at a salary of fifteen hundred dollars a year;

Such temporary clerks as may from time to time be needed, but the allowance for such temporary clerks shall in no one year exceed one thousand dollars.

7. The Superintendent of the Treasury building shall, from time to time, provide such rooms as may be suitable and necessary for the Department of Commerce in some building in the vicinity of the Treasury building.

8. The Secretary of the Treasury shall design and establish a seal for the Department of Commerce.

9. All Consular officers, all officers of customs, and all shipping masters, pilots and inspectors shall make and send to the Department of Commerce such returns or reports on any matter relating to American merchant shipping or seamen as such Department shall require.

10. The Department of Commerce may, from time to time, whenever it deems it expedient so to do, appoint any competent person or persons as Inspectors to supervise pilots and pilotage, the shipping and discharge of seamen, the examination, licensing and discipline of officers of the Merchant Marine, the inspection of steam vessels and the execution of the laws of the United States relating to shipping, and to require of such Inspectors reports upon the following matters—that is to say:

(1.) Upon the nature and causes of any accident or damage which any ship, vessel or steamer has sustained or caused, or is alleged to have sustained or caused.

(2.) Whether the provisions of the Acts of Congress of the United States, relative to American merchant shipping or seamen, or the regulations of hulls and boilers, or pilotage, or any regulations made under and by virtue of such acts have been complied with.

(3.) Whether the hull and machinery of any steamship are sufficient and in good condition.

11. Every Inspector shall have the following powers—that is to say:

(1.) He may go on board any ship, vessel or steamer, and may inspect the same or any part thereof, or any of the machinery, boats, equipments or articles on board thereof to which the provisions of any Act of Congress apply, not unnecessarily detaining or delaying her from proceeding on any voyage.

(2.) He may enter and inspect any premises, the entry or inspection of which appears to be to him requisite for the purposes of the report which he is directed to make.

(3.) He may by summons, under his hand, require the attendance of all such persons as he thinks fit to call before him and examine for such purpose, and may require answers or returns to any inquiries he may think fit to make:

(4.) He may require and enforce the production of all books, papers, or documents which he considers important for such purpose.

(5.) He may administer oaths or affirmations to all or any persons summoned before him as witnesses.

12. Any person who, when duly summoned before such Inspector, refuses to appear, or testify, or to produce books, papers or documents, shall be deemed guilty of a misdemeanor, and shall be subject to a fine of not less than ten or more than five hundred dollars.

13. Any person who willfully impedes any such Inspector in the discharge of his duties, whether on board any ship, vessel or steamer, or elsewhere, shall be deemed guilty of a misdemeanor, and shall be subject to a fine of not less than ten or more than one thousand dollars, and at the time of committing the offense may be seized and detained by such Inspector, or by any person or persons whom he may call to his assistance, until such offender can be conveniently taken before some committing magistrate having proper jurisdiction.

14. In addition to the jurisdiction and powers hereby expressly conferred on the Department of Commerce, such Department shall have all the jurisdiction and powers heretofore vested in the Board of Supervising Inspectors.

15. Sections 4402, 4403, 4405, of the Revised Statutes, are hereby repealed.

16. All reports required by Title LII., Chapter 1, of the Revised Statutes, to be made to the Secretary of the Treasury or to the Board of Supervising Inspectors, shall hereafter be made to the Department of Commerce, and all appointments to office provided for in said Chapter shall hereafter be made by the Department of Commerce.

17. Section 4501 of the Revised Statutes, so far as it gives the appointment of Shipping Commissioners to Circuit Courts,

is hereby repealed, and the power to make such appointments is hereafter vested in the Department of Commerce.

18. All powers and jurisdiction over merchant shipping and seamen (except such as relate to the revenue) heretofore vested in the Secretary of the Treasury shall be hereafter exercised through the Department of Commerce.

19. The Bureau of Statistics is hereby abolished, and the powers and duties now conferred and imposed upon such Bureau shall devolve upon the Department of Commerce.

20. All Acts and parts of Acts in conflict with this Act are hereby repealed.

"*I.*"—STATEMENT OF ENTIRE TONNAGE BUILT ON THE PACIFIC COAST, U. S. A., during the years ending June 1860 and 1883, both inclusive, as per U. S. Reports on Commerce and Navigation.

| YEAR. | CALIFORNIA. | | | | OREGON. | | | | WASHINGTON TERRITORY. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STEAM. | | SAIL. | | STEAM. | | SAIL. | | STEAM. | | SAIL. | |
| | No. of Vessels. | Whole Tonnage. | No of Vessels. | Whole Tonnage. | No. of Vessels. | Whole Tonnage. | No. of Vessels. | Whole Tonnage. | No of Vessels. | Whole Tonnage. | No. of Vessels. | Whole Tonnage. |
| 1860.. | 8 | (both) 2,023.23 | 23 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1861.. | 7 | (both) 4,715.71 | 42 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1862.. | 6 | (both) 2,524.26 | 22 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1863.. | 6 | (both) 2,670.67 | 26 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1864.. | 11 | (both) 4,852.50 | 42 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1865.. | 8 | (both) 2,815.57 | 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1866.. | 13 | (both) 5,495.59 | 1 | ..... | ..... | ..... | ..... | ..... | 2 | (both) 628.29 | 5 | ..... |
| 1867.. | 9 | (both) 4,323.77 | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1868.. | 8 | 2,212.52 | 33 | 2,493.01 | ..... | ..... | 3 | 126.59 | 2 | 58.16 | 2 | 408.09 |
| 1869.. | 14 | 1,982.11 | 58 | 7,938.07 | 9 | 1,517.00 | 8 | 265.48 | 4 | 343.84 | 15 | 1,668.26 |
| 1870.. | 18 | 3,179.58 | 49 | 5,207.08 | 11 | 830.74 | 4 | 63.28 | 4 | 315.88 | 9 | 1,033.96 |
| 1871.. | 4 | 1,603.84 | 12 | 808.18 | 7 | 2,134.25 | 7 | 139.71 | 2 | 122.78 | 3 | 22.39 |
| 1872.. | 2 | 253.54 | 8 | 414.45 | 5 | 693.63 | 2 | 80.82 | 1 | 161.54 | 4 | 302.45 |
| 1873.. | 7 | 1,510.47 | 20 | 1,371.49 | 5 | 1,316.17 | 2 | 31.25 | 2 | 214.76 | 7 | 538.59 |
| 1874.. | 9 | 1,764.27 | 23 | 4,625.65 | 7 | 278.45 | 4 | 86.68 | ..... | ..... | 13 | 2,223.74 |
| 1875.. | 14 | 1,981.54 | 29 | 3,764.87 | 11 | 1,559.55 | ..... | ..... | 3 | 409.90 | 9 | 2,773.78 |
| 1876.. | 14 | 4,844.69 | 49 | 3,712.10 | 14 | 3,957.63 | 5 | 1,335.62 | 3 | 166.15 | 13 | 2,142.91 |
| 1877.. | 10 | 1,337.13 | 35 | 3,447.86 | 11 | 3,329.80 | 11 | 254.86 | 3 | 227.82 | 10 | 2,764.98 |
| 1878.. | 10 | 4,121.24 | 23 | 1,702.98 | 11 | 4,234.21 | 7 | 182.75 | 1 | 5.08 | 5 | 631.74 |
| 1879.. | 12 | 2,853.10 | 18 | 1,007.02 | 11 | 5,429.55 | 5 | 697.28 | 6 | 489.58 | 7 | 375.08 |
| 1880.. | 7 | 4,948.85 | 11 | 846.31 | 13 | 2,027.40 | 2 | 75.17 | 5 | 666.36 | 2 | 15.96 |
| 1881.. | 5 | 1,358.62 | 21 | 3,197.08 | 13 | 1,616.50 | 7 | 1,689.46 | 3 | 35.29 | 7 | 2,495.61 |
| 1882.. | 11 | 3,620.53 | 25 | 3,377.09 | 10 | 2,699.81 | 10 | 2,135.90 | 7 | 407.01 | 11 | 3,530.18 |
| 1883.. | 11 | 2,408.06 | 41 | 6,638.51 | 14 | 878.09 | 5 | 1,690.04 | 9 | 732.12 | 10 | 3,218.39 |